



DIPLOMA IN SHIP SUPERINTENDENCY

MODULE 8

The Superintendent and Emergency Planning, Management and Response

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PLEASE NOTE

Directed Learning questions are provided periodically through this module. These questions are designed to help you with your study. The questions are for your personal study only. Do not send in your answers to these questions as they will not be assessed.

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GENERAL INTRODUCTION AND LEARNING OUTCOMES

When asked why airline pilots are paid high salaries their standard reply is that they earn their money when there is a problem and are bus drivers the rest of the time. Very much the same can be said for superintendents. Arguably, their most important role as a superintendent is in the appreciation of potential catastrophic events, effective preparation for those events and handling those events if they occur.

Hopefully, no superintendent will ever be involved in such a catastrophe as say the *Costa Concordia*.¹ That said, bad ship based management will always undo effective shore based management simply because the ship staff are on site at the time of the event whereas the superintendent could well be at home asleep when the event occurs. And there have been many situations where the ship staff fail to contact the shore staff immediately but for some reason wait until the situation has actually got substantially worse.²

The case of the *Costa Concordia* will be referred to in detail in this module to illustrate a number of issues that have arisen from that grounding. An extract from the summary of the report can be found below.³

In essence, this module covers planning to avoid emergencies, planning for when an emergency does occur and accident investigation.

For those inclined to read around the subject of accident investigation, the MAIB website⁴ is highly recommended. The MAIB produces short form reports on a very regular basis which are always interesting reading.

This module follows on to some extent from Modules 4 and 5 in that some aspects of international law will be revisited. However, this will be from the perspective of the need for the superintendent to comply with various obligations set down in certain international conventions so the approach to the conventions will be different.

Since the development of the safety culture led by the IMO and the introduction of the ISM Code (see further below), the role of the superintendent has been increasingly recognised as pivotal to introducing and maintaining a safety culture on board ships.



On successful completion of this module, you will be able to:

- evaluate the role of the superintendent in ship emergencies;
- discuss the superintendent's role in emergency planning; and
- explain the process of accident investigation.

¹ *Costa Concordia* – MIT report on the safety technical investigation.

² Union Star – Penlee Lifeboat Disaster – December 1981 – Cornwall Guide (accessed August 2015).

³ *Costa Concordia* – MIT report on the safety technical investigation.

⁴ See <https://www.gov.uk/government/organisations/marine-accident-investigation-branch> (accessed August 2015).

1. LEGAL OBLIGATIONS



Learning Outcomes:

On successful completion of this chapter, you will be able to:

- discuss the company's obligations under the IMO conventions;
- appreciate the dynamic amendment process in SOLAS; and
- discuss the DPA's role under the ISM Code.

1.1 *Introduction*

This chapter of the module will cover the relevance and application of international law to the superintendent's role.

1.1.1 *IMO Guidelines*

1.1.2 *International Law, Regulation of Shipping and Shipping Companies, and the Implications for the Superintendent*

As such, there are no specific guidelines in any IMO conventions or formal documents that refer to superintendents and/or their role with the exception of the report on the progress of the ISM⁵ where it is recognised that most of those that conduct internal audits at ISM companies are company superintendents.

Perhaps the reason why the company superintendent is not specifically mentioned is because the concept of superintendent may change from company to company and thus that those who draft for the IMO have avoided pinning down the role of the superintendent and left it to those running the companies to decide who in the company should perform which task.

That said, the conventions and other documents do include references to people who might also be superintendents and arguably the most important of these is the role of the Designated Person (or Designated Person Ashore as they have become known)⁶ under the ISM Code.

It is essential and incumbent on the superintendent to find out exactly what role their position covers:

- Is it their responsibility to ensure compliance with all the conventions?
- Or are the responsibilities split between various individuals in the company, or even sub-contracted?⁷
- In other words, who does what?

Further, while there are specific regulations to be complied with the ISM in particular relies upon the concept that compliance is more than just meeting the obligations set down in the paperwork; it includes complying with the spirit and intention of the convention to improve safety as an on-going commitment throughout the company.⁸

⁵ Assessment of the impact and effectiveness of the ISM Code – www.imo.org/en/OurWork/HumanElement/Safety/Management/Pages/ISMAssessment.aspx.

⁶ The ISM Designated Person – Keystone or Scapegoat? ... Dr Phil Anderson <http://www.galleon.uk.com/assets/Uploads/ARTICLE-THe-ISM-Designated-Person-Keystone-or-Scapegoat-by-Dr-Phil-Anderson.pdf> (accessed September 2015).

⁷ The ISM Designated Person – Keystone or Scapegoat? ... Dr Phil Anderson <http://www.galleon.uk.com/assets/Uploads/ARTICLE-THe-ISM-Designated-Person-Keystone-or-Scapegoat-by-Dr-Phil-Anderson.pdf> (accessed September 2015).

⁸ See <http://www.ics-shipping.org/docs/default-source/resources/safety-security-and-operations/implementing-an-effective-safety-culture.pdf?sfvrsn=8> (accessed September 2015).

1.1.3 ISM Code Obligations

1.1.4 The Specific Requirements of the ISM Code

This section will include the specific requirements of the ISM Code on the reasonable assumption that the company superintendent will be tasked as the designated person ashore.



Figure 1
Erika – Sinking, cavemancircus.com

1.2 IMO Guidelines

1.2.1 International Law, Regulation of Shipping and Shipping Companies, and the Implications for the Superintendent

Maritime conventions, regulatory controls and codes in shipping have been covered in Module 4 and thus it is unnecessary to revisit these in detail. However, it is appropriate to consider the superintendent's likely role in the context of international law regulation of shipping and shipping companies.

The following conventions have already been reviewed and compliance with all of them is important to the running of ships and shipping companies. SOLAS and its associated codes will be commented on further here. However, the ISM Code will be reviewed below.

- International Convention for the Safety of Life at Sea (SOLAS).
- International Safety Management (ISM) Code.

- International Ship and Port Facility Security (ISPS) Code.
- International Maritime Dangerous Goods (IMDG) Code.
- Safe Manning, Hours of Work and Watchkeeping (Safe Manning) Regulations.
- Convention on the International Regulations for Preventing Collisions at Sea (COLREGs).
- Standards of Training, Certification and Watchkeeping (STCW).
- International Convention on Tonnage Measurement of Ships (Tonnage Regulations).
- International Convention on Load Lines (Load Lines).
- International Convention for the Prevention of Pollution from Ships (MARPOL).

1.3 *International Convention for the Safety of Life at Sea (SOLAS)*

The IMO itself states:

"The SOLAS Convention in its successive forms is generally regarded as the most important of all international treaties concerning the safety of merchant ships."⁹

The sinking of the *Titanic* and revelations such as there being fewer places on the life boats and life rafts than the number of passengers aboard prompted a thorough review of safety of life at sea and from this the first version of SOLAS was adopted in 1914. From this version others were introduced culminating in the 1974 version. This final version has been updated and amended but by the tacit acceptance method where the amendment will be adopted unless a specified number of parties to the convention lodge objections before a specified date.

This makes SOLAS a very dynamic convention that can be changed and updated very quickly. Thus, it is very important for anyone with responsibility for ensuring that ships comply with the convention to keep themselves updated with all and any changes that are adopted. Given the wide ranging ambit of the SOLAS convention it is essential for superintendents to arrange to receive updates and to then make sure that the updates are complied with as necessary.

The IMO states that:¹⁰

"The main objective of the SOLAS convention is to specify minimum standards for the construction, equipment and operation of ships, compatible with their safety. Flag states are responsible for ensuring that ships under their flag comply with its requirements, and a number of certificates are prescribed in the convention as proof that this has been done. Control provisions also allow contracting governments to inspect ships of other contracting states if there are clear grounds for believing that the ship and its equipment do not substantially comply with the requirements of the convention – this procedure is known as port state control. The current SOLAS Convention includes articles setting out general obligations, amendment procedure and so on, followed by an annex divided into 12 chapters."

⁹ See [http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Safety-of-Life-at-Sea-\(SOLAS\),-1974.aspx](http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Safety-of-Life-at-Sea-(SOLAS),-1974.aspx) (accessed September 2015).

¹⁰ See [http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Safety-of-Life-at-Sea-\(SOLAS\),-1974.aspx](http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Safety-of-Life-at-Sea-(SOLAS),-1974.aspx) (accessed September 2015).

These chapters will have been reviewed in detail elsewhere in this course but it is noteworthy that Chapter VII of SOLAS makes the International Maritime Dangerous Goods (IMDG) Code mandatory. This code was developed and introduced by the IMO and is one of a number of Codes that appear under the umbrella of SOLAS.

Chapter IX gives effect to the International Safety Management (ISM) Code. Again, the ISM Code is mandatory.

Chapter XI-2 makes the International Ship and Port Facilities Security (ISPS) Code mandatory (Part A) and then Part B contains guidance on how to comply with the provisions of Part A. It is important to note that this chapter:

"confirms the role of the master in exercising his professional judgement over decisions necessary to maintain the security of the ship. It says he shall not be constrained by the company, the charterer or any other person in this respect."¹¹

Thus, SOLAS is both a freestanding convention and a vehicle which has facilitated the introduction of a number of mandatory codes.

Within Chapter II-1 of SOLAS, there are so-called "goal-based standards" for oil tankers and bulk carriers requiring new ships, i.e. post 2010, to be designed and constructed to be safe and environmentally-friendly when intact and having suffered certain specified damage. The ships should have adequate strength, integrity and stability to minimise the risk of the loss of the ship or pollution to the marine environment.

Of course, the questions now are:

- What is a goal based standard?
- How is a superintendent to know what he is supposed to comply with and achieve when faced with the words "goal based standard"?

Helpfully, the IMO has produced a brief and very helpful note on goal based standards which is quoted below in full:

"The basic principles of IMO goal-based standards/regulations are:

- Broad, over-arching safety, environmental and/or security standards that ships are required to meet during their life cycle.
- The required level to be achieved by the requirements applied by class societies and other recognised organisations, administrations and IMO.
- Clear, demonstrable, verifiable, long standing, implementable and achievable, irrespective of ship design and technology.
- Specific enough in order not to be open to differing interpretations.

¹¹ See [http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Safety-of-Life-at-Sea-\(SOLAS\),-1974.aspx](http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Safety-of-Life-at-Sea-(SOLAS),-1974.aspx) (accessed September 2015).

The above basic principles were developed to be applicable to all goal-based standards developed by IMO and not only to ship construction standards, in recognition that, in the future, IMO may develop goal-based standards for other safety areas, e.g. machinery, equipment, fire-protection etc, as well as security and environment protection related areas, and that all goal-based standards developed by the organisation should follow the same basic principles.

The latest IMO instruments using the GBS approach are the Polar Code, IGF Code and Goal-based ship construction standards for bulk carriers and oil tankers.

Goal-based ship construction standards for bulk carriers and oil tankers and the GBS verification audit scheme.

The Maritime Safety Committee, at its 87th session in May 2010, adopted a new SOLAS Regulation II-1/3-10 on goal-based ship construction standards for bulk carriers and oil tankers (Resolution MSC.290(87)).

This regulation, which entered into force on 1 January 2012, requires that all oil tankers and bulk carriers of 150 m in length and above, for which the building contract is placed on or after 1 July 2016, satisfy applicable structural requirements conforming to the functional requirements of the International Goal-based Ship Construction Standards for Bulk Carriers and Oil Tankers (GBS Standards) (Resolution MSC.287(87)).

Under the GBS Standards, construction rules for bulk carriers and oil tankers of classification societies which act as Recognised Organisations (ROs) or national administrations will be verified, by international GBS audit teams established by IMO's Secretary-General, based on the guidelines for verification of conformity with goal-based ship construction standards for bulk carriers and oil tankers (Resolution MSC.296(87)) (GBS Guidelines).

These guidelines foresee that recognised organisations and/or national maritime administrations submit requests for verification of their ship construction rules to the secretary-general, who will forward these requests to the audit teams to be established for a verification of the submitted information through an independent review. The final reports of the teams with relevant recommendations are then forwarded to the MSC for consideration and approval.¹²



Directed Learning:

Review the extract from the summary of the *Costa Concordia* case below. Consider the IMO Conventions you have already reviewed and comment on how they either have already been amended or how you consider they should be amended as a result of the case. It may be necessary to do some additional research.

Once you have done this, publish your brief thoughts on the module forum on the Learning Management System so we can share our findings and read what other participants have written.

¹² See <http://www.imo.org/en/OurWork/Safety/SafetyTopics/Pages/Goal-BasedStandards.aspx> (accessed September 2015).



Figure 2

Costa Concordia – <https://www.abcnews.go.com>

1.3.1 Costa Concordia – Case Study



Case Study

Extract from the summary of the report by the Marine Casualties Investigative Body – C/S *Costa Concordia*.

"Summary

If the danger of fire has always been the utmost threat for passenger vessels and still is, despite the technological evolution and the progress of rules and regulations as well as the higher skills resulting from the training and from the severe safety management system (on board and ashore), in the Concordia casualty we have discovered that a contact characterised by the dynamic that occurred in this event also represents a serious risk.

Efforts made in the issue of flooding after a contact also regarding passenger vessels, have in particular recently produced the 'safety return to the port' SOLAS package of regulations. These have already been considered, as you will note at the end of this Report, as recommendations to improve safety against flooding after a contact.

We point out, first of all, that the immediate flooding of five contiguous watertight compartments, where most of the vital equipment of the ship was located, makes the *Costa Concordia* casualty quite a unique event, because of the extent of damage is well beyond the survivability standard applicable to the ship according to her keel laying date.

Although, if we want to analyse this casualty (as we did) to try, in the end, to avoid similar consequences, the related correction measures should be truly significant, despite the measures may not be sufficient to render the ship unsinkable when more than two contiguous watertight compartments are flooded. Despite the above mentioned, we anticipate that we, however, carried out the present investigation to identify some concrete practical solutions which could provide certain useful indications for possible future improvements of the current regulations.

The aim of this report is, therefore, to set the serious flooding in an analytical and complete way, by means of a detailed analysis of the phenomenon, supported by scientific methods, with the purpose to reduce, as far as practicable, the range of variables – among those which contribute to cause a flooding – predictable, thus preventable.

On 13 January 2012, whilst the *Costa Concordia* was in navigation in the Mediterranean Sea (Tyrrenian sea, Italian coastline) with 4,229 persons on board (3206 passengers and 1023 crew members), in favourable meteo-marine conditions, at 21.45.07 LT (local time) the ship suddenly collided with the 'Scole Rocks' at the Giglio Island. The ship had just left the port of Civitavecchia and was directed to Savona (Italy).

The ship was sailing too close to the coastline, in a poorly lit shore area, under the master's command who had planned to pass at an unsafe distance at night time and at high speed (15.5 kts). The danger was considered so late that the attempt to avoid the grounding was useless, and everyone on board realised that something very serious was happening, because the ship violently heeled and the speed immediately decreased. The vessel immediately lost propulsion and was consequently effected by a black-out.

The emergency generator power switched on as expected, but was not able to supply the utilities to handle the emergency and on the other hand worked in a discontinuous way. The rudder remained blocked completely starboard and no longer handled. The ship turned starboard by herself and finally grounded (due to favourable wind and current) at the Giglio Island at around 23.00 and was seriously heeled (approximately 15°). From the analysis carried out under the direct co-ordination of the master, the seriousness of the scenario was reported after 16 minutes.

After about 40 minutes (22.27) the water reached the bulkhead deck in the aft area. The assessment of the damage was continued by the crew, realising, at the end, that watertight compartments (WTC) Nos 4, 5, 6, 7 and 8 were involved. These WTCs accommodated, among others, machinery and equipment vital for the propulsion and steering of the ship, such as:

- within WTC 4 – main thrusts bearings and hydraulic units, machinery spaces air conditioning compressors;
- within WTC 5 – propulsion electric motors (PEM), fire and bilge pumps, propulsion and engine room ventilation transformers, propulsion transformers;
- within WTC 6 – three main diesel generators (aft);
- within WTC 7 – three main diesel generators (fwd); and
- within WTC 8 – ballast and bilge pumps.

Only after the following days, it was discovered that the breach was 53 meters long. The master did not warn the SAR Authority of his own initiative (the warning was received by a person calling from shore) and, despite the SAR Authority started to contact the ship few minutes after 22.00, he informed these authorities about a breach only at 22.26.02, launching the related distress only at 22.38 (on insistence of Livorno SAR Authority).

However, SAR activities had started at 22.16, when Livorno Authority had ordered the GDF Patrol Boat 104, already in the area, to approach the Concordia. From the above mentioned time the following SAR resources were involved:

- 25 patrol boats;
- 14 vessels;
- four tugs; and
- eight helicopters.

Only at 22.54.10 the abandon ship was ordered but it was not preceded by an effective general emergency alarm definitely (several passengers – in fact – testified that they did not catch those signal-voice announcement). The first lifeboats result being lowered at 22.55 and at 23.10 they moved to the shore with the first passengers on board. Crew members, master included, abandoned the bridge at about 23.20 (one officer only remained on the bridge to co-ordinate the abandon ship).

At about 24.00, the heeling of the vessel seriously increased reaching a value of 40°. During the rescue operations it reached 80°. At 00.34, the master communicated to the SAR Authorities that he was on board a lifeboat with other officers. All the saved passengers and crew members reached Giglio Island (the ship had grounded just few meters from the port of Giglio). First rescue operations were completed at 06.17, saving 4194 persons. Three more persons were put in safety on 15 January.

The rescue operations continued and on 22 March the last victim was found. The number of victim is 32, and two of these are still missing (one passenger, one crew member). The person died are 26 passengers and four crew members. Environment operations immediately took place recovering within the 24 March the 2042.5mc of oils. Caretaking of seabed is still underway, as well as wreck recovering, which started last June. The analysis of this casualty briefly puts in evidence the following results:

(a) The navigation phases before the impact are to be considered as a crucial aspect, because they relate with the causes originating the accident. In particular, the focus is on the behaviour of the master and his decision to make that hazardous passage in shallow waters. The computer simulation somewhat confirmed delays in the ship's manoeuvring in that particular circumstance. In this respect, the following critical points can be preliminarily indicated as contributing factors to the accident:

- shifting from a perpendicular to a parallel course extremely close to the coast by intervening softly for accomplishing a smooth and broad turn;
- instead of choosing, as reference point for turning, the most extreme landmark (Scole reef, close to Giglio town lights) the ship proceeded toward the inner coastline (Punta del Faro, southern and almost uninhabited area, with scarce illumination);

- keeping a high speed (16 kts) in night conditions is too close to the shore line (breakers/reef) – using an inappropriate cartography, i.e. use of Italian Hydrographical Institute. chart nr 6 (1/100.000 size scale), instead of at least nr 122 (1/50.000 size scale) and failing to use nautical publications;
- handover between the master and the chief mate did not concretely occur;
- bridge (full closed with glasses) did not allow verifying, physically outside, a clear outlook in night-time (which instead could have made easier the master eyes adaptation towards the dark scenario);
- master's inattention/distraction due to the presence of persons extraneous to bridge watch and a phone call not related to the navigation operations;
- master's orders to the helmsman aimed at providing the compass course to be followed instead of the rudder angle;
- bridge team, although more than suitable in terms of number of crew members, not paying the required attention (e.g. ship steering, acquisition of the ship position, lookout);
- master's arbitrary attitude in reviewing the initial navigation plan (making it quite hazardous in including a passage 0.5 mile off the coast by using an inappropriate nautical chart), disregarding to properly consider the distance from the coast and not relying on the support of the bridge team; and
- overall passive attitude of the bridge staff. Nobody seemed to have urged the master to accelerate the turn or to give warning on the looming danger. Therefore, the accident may lead to an overall discussion on the adequacy, in terms of organisation and roles of bridge teams.

- (b) The general emergency alarm was not activated immediately after the impact. This fact led to a delay in the management of the subsequent phases of the emergency (flooding-abandon ship process). With regard to the organisation on board, the analysis of crew certification, of the Muster List (ML) and of the familiarisation and training highlighted some inconsistencies in the assignment of duties to some crew members.
- (c) In addition, the lack of direct orders from the bridge to crew involved in safety issues somehow hindered the management of the general emergency-abandon ship phase and contributed to initiatives being taken by individuals. The presence of different backgrounds and basic training of crew members may have played a role in the management of emergencies.
- (d) About the different scope of the Minimum Safe Manning (MSM) document and the Muster List (ML), the SOLAS regulation V/14.1 requires that the ship shall be sufficiently and efficiently manned, from the point of view of the protection of the safety of life at sea. This regulation makes reference, but not in a mandatory way, to the Principles of Safe Manning adopted by the organisation by Resolution A.890(21) as amended by Resolution A.955(23).

- (e) Too often the scope of the Muster List is confused with that of the Minimum Safe Manning. In fact, while the crew designated in the MSM has to meet the STCW requirements for being appointed to specific safety tasks aboard the ship, this may not be the case for those crew members to whom the same safety tasks are assigned through the ML (and not through the MSM).
- (f) A combination of factors has caused the immediate and irreversible flooding of the ship beyond any manageable level. The scenario of two contiguous compartments (WTC 5 and 6) being violently flooded – thus in a very short period of time after the contact (for WTC 5 the time for its complete flooding was only few minutes) – already represents a limit condition, as far as buoyancy, trim and list are concerned, in which the order for ship's abandon is given to allow a safe and orderly evacuation.
- (g) The ship stability was further hampered by the simultaneous flooding of other three contiguous compartments, namely WTCs 4, 7 and 8. The flooding of these additional compartments dramatically increased the ship's draught so that Deck 0 (bulkhead deck) started to be submerged.

Also, the effect of the free surface created in these compartments prior to their complete flooding (occurred in about 40 minutes) was detrimental for the stability of the ship, causing the first significant heeling to starboard, which increased more and more the progressive flooding of adjacent WTC 3.

In WTC 3 the water entered from the bulkhead deck (Deck 0), through the stairway enclosures connecting such deck to Deck C. 45 minutes after the contact, the heeling to starboard reached 10°, and just before grounded 1h 09' after the impact almost 20°. Then, 15' after grounded, the heeling was more than 30°.

- (h) A concomitant critical factor, caused by the severe and fast income of water, was the immediate loss of propulsion and general services located in WTCs 5 and 6.
- (i) One of the consequences was that the various high capacity sea-water service pumps (capacity between 500 to 1300 m³/h, fed by the main switchboard only) that were fitted with a direct suction in the space where they were located, became unavailable.
- (j) It is noted that the rules applicable to the *Costa Concordia* did not require the installation of a flood detection system in watertight compartments, and that the ship was fitted, on a voluntary basis, with a computerised program capable to verify the compliance of the loading conditions with the acceptance criteria set out in SOLAS Chapter II-1.

Therefore, said programme was not (and was not required to be) designed to provide direct information on the calculation of the residual damage stability during the flooding.

- (k) The further analysis related to the sequence of the functioning of the emergency diesel generator (black-out of the main electrical network, isolation of the emergency network and automatic starting of the emergency diesel generator), allowed to show that due to the high complexity of the electric production/distribution network (bearing in mind that the violent impact and the

enormous quantity of water that invaded the vital parts of the ship) created critical aspects that generated uncontrollable consequences and damage, even invisible, rightly so imponderable.

For this reason the connection between the emergency diesel generator and the related Switchboard, which initially worked and after collapsed, and then worked forcedly in a discontinuous way.

- (l) Another factor that may have impaired the management of the situation was the lack of orders according to the muster list addressing disoriented – of course, the crew assigned on the base of the muster list, taking into account this specific emergency.

Some contribution in the disorienting situation could be due also to the wireless communication system, which is not supplied by emergency power but the key persons were all equipped with PMR devices and, therefore, those wireless breakdown was not influent.

- (m) Poor consideration can be made about the five contiguous watertight compartments, where most of the vital equipment of the ship was located, because no residual stability could have been maintained either by the *Costa Concordia* or any other ship. However, the stability calculation and simulation showed that the ship responded to the SOLAS requirement applied to her.

Finally, after the casualty, caused by the master in combine with his officers staff present with him on the bridge, the co-ordination lack in the emergency – due to not applying the related SMS procedures and not following these as the best guideline to face the serious event – resulted the main and crucial unsuccessful factor for its management.

The master together with some of the staff deck officers, as well the hotel director, failed their role determining a fundamental influence for reaching the above mentioned fail.

Moreover, spite off the DPA was continually warned about the serious development of the scenario (meanwhile the master was in the bridge, in fact their dialogue, although discontinue, started at 21.57.58 and finished at 23.14.34), he never thought (as declared during two interviews with the Prosecutor) to speed up the master to plan the abandon ship.

This could represent an indirectly contributing factor, even if the master minimised (till 22.27 hours) the information about the seriousness of the situation towards the DPA.

In fact, this last key person should have speed up the master, at least in terms of his own moral obligation.

It is worth to anticipate that, according with the evidences found at the end of the present investigation, *Costa Concordia* resulted in full compliance with all the SOLAS applicable regulations matching, therefore, all the related requirements once she left the Civitavecchia Port on the evening of the 13 January 2013.”



Salvage operation



Source: Titan/Micoperi. Image: Getty

Figure 3

Costa Concordia – Righting Plan – <http://bbc.co.uk>

1.4 **ISM Code Obligations**

1.4.1 **The Specific Requirements of the ISM Code**

It can be argued that, from the shipping company's perspective, the most important aspect of the ISM Code is the introduction of the Designated Person (DP) or Designated Person Ashore (DPA). Apparently, the early drafts of the ISM Code made no reference to a Designated Person and the drive for the introduction of this concept came from the British government in response to the *Herald of Free Enterprise* disaster.¹³ In 1988, after the formal enquiry, The Merchant Shipping (Operations Book) Regulations 1988 were passed requiring all UK passenger ships employed on short sea trade:

- "to carry an 'operations book' containing instructions and information for safe and efficient operations; and
- the owners were required to nominate a person (known as the Designated Person) to oversee the operations of their ships and to ensure that proper provisions were made so that the requirements of the operations book were complied with."¹⁴

¹³ Department of Transport Merchant Shipping Act 1894 MV *Herald of Free Enterprise*, Report of Court No 8074. Formal Investigation.

¹⁴ The ISM Designated Person – Keystone or Scapegoat? ... Dr Phil Anderson <http://www.galleon.uk.com/assets/Uploads/ARTICLE-THe-ISM-Designated-Person-Keystone-or-Scapegoat-by-Dr-Phil-Anderson.pdf> (accessed September 2015).

One cause of the *Herald of Free Enterprise* disaster was the failure of the shore personnel to take action or even note of a number of the master's written concerns about the operation of the ferry. A specific recommendation was that there should be a mechanism on the bridge confirming that the bow doors were closed. This was ignored at the time it was made but the fleet of ferries was retro-fitted with this device very quickly after the *Herald of Free Enterprise* capsized.

This demonstrated just how fast the work could be done once there was appropriate pressure on the management of the owning company. Lord Justice Sheen conducted the formal inquiry into the loss of the *Herald of Free Enterprise* and described the management failures as "the disease of sloppiness".

The Maritime and Coastguard Agency provides a clear and concise commentary on the Principles and Objectives of the ISM Code¹⁵ which is similar to that given by the IMO.¹⁶ While this may be duplication of previous Modules it bears repetition here because of its relevance to the tasks set for the Designated Person. The section in italics is commentary by the MCA on the particular section of the ISM Code.

"1.2 Objectives

1.2.1 The objectives of the 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.

1.2.2 Safety management objectives of the company should, *inter alia*:

- provide for safe practices in ship operation and a safe working environment;
- assess all identified risks to its ships, personnel and the environment and establish appropriate safeguards; and
- continuously improve safety-management skills of personnel ashore and aboard ships, including preparing for emergencies related both to safety and environmental protection.

1.2.3 The safety management system should ensure:

- compliance with mandatory rules and regulations; and
- that applicable codes, guidelines and standards recommended by the organisation, administrations, classification societies and maritime industry organisations are taken into account.

The company SMS should provide for methods of identification of risks and establishment of safeguards against the same. This shall be verified during the course of audits of the company for issuance of the DOC and the company should be able to provide evidence of following the risk assessment procedures. During the SMS audits on board, a few risk assessments need to be randomly sampled and verified for effectiveness.

Inadequacies in the general standard of risk assessment should lead to closer examination of on board risk assessments and the related procedure. While selecting the sample, auditors should be guided by incidents/accidents on board the vessel and other vessels in the fleet or by operations which are taking place while on board.

¹⁵ MSIS 2/Rev 03/15 – Maritime and Coastguard Agency International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code) – Instructions for the Guidance of Surveyors 03/15.

¹⁶ http://www.ismcode.net/auditing-procedures/mca_instructions_for_the_guidance_of_surveyors.pdf (accessed September 2015).

It is to be noted that there is no requirement to comply with codes, guidelines, standards etc (1.2.3.2). However, the SMS should take these into account and alternative measures should be in place if the company have decided not to comply with these.”¹⁷

The ISM Code draft was approved in November 1993 and the role of Designated Person is set out in Section 4 as follows:

“To ensure the safe operation of each ship and to provide a link between the company and those on board, every company, as appropriate, should designate 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.”

This section has not been changed since 1993 as can be seen from the most recent commentary on Section 4 and designated persons from the IMO¹⁸ and from the Maritime and Coastguard Agency. These separate commentaries are very similar. The MCA commentary is quoted below in italics.

“4 Designated Person(s)

To ensure the safe operation of each ship and to provide a link between the company and those on board, every company, as appropriate, should designate a person or persons ashore having direct access to the highest level of management. The responsibility and authority of the DP 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.

The task of implementing and maintaining the SMS is a management responsibility, however, the DPA holds a key role in the monitoring process. DPAs should be suitably qualified (refer to MSC-MEPC.7/Circ.6) and experienced in ship operations or management systems and be fully conversant with the company’s safety and environmental protection policies and SMS. It is essential that they have the independence and authority to report to the highest level of management. Their responsibilities may include the organisation of the company’s internal safety audits.

In order for any system of management to be adequately maintained it is essential that it is monitored at regular intervals. This will ensure that:

- implementation is verified;
- deficiencies are reported; and
- those responsible for corrective action are identified and that appropriate action is taken.”¹⁹

¹⁷ MSIS 2/Rev 03/15 – Maritime and Coastguard Agency International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code) – Instructions for the Guidance of Surveyors 03/15, p 28.

¹⁸ http://www.ismcode.net/auditing-procedures/mca_instructions_for_the_guidance_of_surveyors.pdf (accessed September 2015).

¹⁹ MSIS 2/Rev 03/15 – Maritime and Coastguard Agency International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code) – Instructions for the Guidance of Surveyors 03/15.

As can be appreciated from the definition above and the commentary from the MCA, the role of the designated person might put that person in conflict with the management of the shipping company depending on the company's corporate culture and approach.

This has always been a concern with the ISM Code²⁰ despite the additional requirements of the Code on both the company and the masters of the ships. Section 3 of the Code which covers the company's responsibilities and authority is quoted below together with the MCA commentary in italics.

"3 Company Responsibilities and Authority

3.1 If the entity that is responsible for the operation of the ship is other than the owner, the owner must report the full name and details of such entity to the administration.

It is incumbent on the company to ensure that the owner fulfils the requirement of this section of the Code. These details should be reported to the MCA. The identification of the ISM manager on the Continuous Synopsis Record issued by the MCA should be considered as evidence of compliance with this requirement.

3.2 The company should define and document the responsibility, authority and interrelation of all personnel who manage, perform and verify work relating to and affecting safety and pollution prevention.

It is necessary to document responsibilities and authorities so that personnel involved in the SMS know what is expected of them and to ensure that the safety and environmental functions have been allocated. The company's documented management system should clearly contain descriptions of the responsibilities and authorities together with the reporting lines of personnel within the management structure. Schematics or flowcharts to document lines of authority and inter-relations between roles are acceptable.

3.3 The company is responsible for ensuring that adequate resources and shore based support are provided to enable the designated person or persons to carry out their functions.

It must be established whether the company is committed to providing the support necessary for the DPA to fulfil his or her duties. This may include reviewing correspondence between the DPA and the management board, the budget for MSIS 2/Rev 03/15 Page 31 safety training and the attitude towards safety issues at management level. Commitment must start at the top and be prevalent throughout the company.²¹

Section 5 of the Code refers to the master's responsibility and authority. Interestingly, the Code is drafted in the order of company responsibility, designated person ashore and then master's responsibility with the master being tasked specifically with running the Safety Management System (SMS) on board the ship.

Certainly, these three sections should be read together and the inter-relationship between the responsibilities of the company, DPA, and the master needs to be understood and appreciated by all three entities.

²⁰ The ISM Designated Person – Keystone or Scapegoat? ... Dr Phil Anderson <http://www.galleon.uk.com/assets/Uploads/ARTICLE-THe-ISM-Designated-Person-Keystone-or-Scapegoat-by-Dr-Phil-Anderson.pdf> (accessed September 2015).

²¹ MSIS 2/Rev 03/15 – Maritime and Coastguard Agency International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code) – Instructions for the Guidance of Surveyors 03/15, p 30.

"5 Master's Responsibility and Authority

5.1 The company should clearly define and document the master's responsibility with regard to:

- .1 implementing the safety and environmental protection policy of the company;
- .2 motivating the crew in the observation of that policy;
- .3 issuing appropriate orders and instructions in a clear and simple manner;
- .4 verifying that specified requirements are observed; and
- .5 periodically reviewing the SMS and reporting its deficiencies to the shore based management.

The responsibility for overseeing and implementing all relevant aspects of the company's SMS on the vessel rests with the master.

Clear guidance should be provided to masters concerning their responsibility on matters affecting the safety of the ship, its passengers and/or cargo and the environment.

5.2 The company should ensure that the SMS operating on board the ship contains a clear statement emphasising the master's authority. The company should establish in the SMS that the master has the overriding authority and the responsibility to make decisions with respect to safety and pollution and to request the company's assistance as may be necessary.

Masters should expect support and encouragement from the company at all times. There must be a clear statement in the documented management system that the master has overriding authority to deviate from the documented system in time of crisis and seek assistance from the company if required.

*Both statements must be clear and unequivocal with the appropriate emphasis placed on the master's overriding authority.*²²

1.5 Training for a Designated Person Ashore (DPA)

It has been mentioned above that while it is not set in stone it is quite usual to find that the superintendent is required to take on the tasks of the designated person ashore.²³ While the final draft of the ISM Code was written in 1993 and became mandatory in 1998 it took until 2007 for the IMO to produce guidance on the:

"qualifications, training and experience necessary for undertaking the role of the designated person..."²⁴

²² MSIS 2/Rev 03/15 – Maritime and Coastguard Agency International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code) – Instructions for the Guidance of Surveyors 03/15, p 31.

²³ The ISM Designated Person – Keystone or Scapegoat? ... Dr Phil Anderson <http://www.galleon.uk.com/assets/Uploads/ARTICLE-THe-ISM-Designated-Person-Keystone-or-Scapegoat-by-Dr-Phil-Anderson.pdf> (accessed September 2015).

²⁴ Circ.6 T5-MEPC/1.01, 19 October 2007.

Dr Phil Anderson had written in 2006 that he had visited companies where the DPA was accepted to be the shipowner's right-hand man and had many years of experience shore side and being at sea, other companies where the DPA was a young graduate who had never been to sea, and yet others where the tasks of the DPA were sub-contracted to an organisation that had no presence in the office where the day-to-day ship operations were taking place.²⁵ He went on to express his concern that in many cases the functions of the DPA were simply not being met by the individual that had taken on the role.

For example, Dr Anderson noted that he had met a DPA who had met only a few of the masters in the fleet, and none of the junior officers or other crew members, and had never been on board any of the ships. When he received messages from the ships he stamped them as received, confirmed receipt back to the ship and filed them. Apparently, he took no action. However, there are other DPAs who are fully conversant with the working of the company and very active, at least partly because they are also an operations manager or technical manager.

Dr Anderson comments that the original drafters of the Code must have intended the DPA to be a conduit – a funnel – to pass information on everything to do with safety both to and from the ship and the shore. This role was often performed by the marine superintendent in the days before the ISM Code and this would explain why it is so often the marine superintendent that performs this role under the Code.

It is noteworthy that Dr Anderson's article was written the year before the IMO issued Circ.6 T5-MEPC/1.01, 19 October 2007 entitled "Guidance on the Qualifications, Training and Experience Necessary for Undertaking the Role of the Designated Person under the Provisions of the International Safety Management (ISM) Code". Dr Anderson had exhorted those reading his article to call for exactly this guidance to improve the code and the DPA's position in the shipping company.

The circular itself includes the statement:²⁶

"The Committees also agreed that there was an urgent need to provide guidance to shipping companies on the qualifications, training and experience for undertaking the role of Designated Person under provisions of the International Safety Management (ISM) Code."

The Committees being the Marine Environment Protection Committee (MEPC) and the Maritime Safety Committee (MSC).

To this end the circular states:

"The present Guidance applies to persons undertaking the role of the Designated Person under the provisions of the International Safety Management (ISM) Code.

2 Qualifications

2.1 Designated person should have a minimum of formal education as follows:

- .1 qualifications from a tertiary institution recognised by the administration or by the recognised organisation, within a relevant field of management, engineering or physical science; or

²⁵ The ISM Designated Person – Keystone or Scapegoat? ... Dr Phil Anderson <http://www.galleon.uk.com/assets/Uploads/ARTICLE-THe-ISM-Designated-Person-Keystone-or-Scapegoat-by-Dr-Phil-Anderson.pdf> (accessed September 2015).

²⁶ Circ.6 T5-MEPC/1.01, 19 October 2007.

- .2 qualifications and seagoing experience as a certified ship officer pursuant to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978, as amended; or
- .3 other formal education combined with not less than three years practical senior level experience in ship management operations.

3 Training

- 3.1 Designated person should have undergone training relating to safety management elements in compliance with the requirements of the ISM Code, particularly with regard to:
 - .1 knowledge and understanding of the ISM Code;
 - .2 mandatory rules and regulations;
 - .3 applicable codes, guidelines and standards as appropriate;
 - .4 assessment techniques of examining, questioning, evaluating and reporting;
 - .5 technical or operational aspects of safety management;
 - .6 appropriate knowledge of shipping and shipboard operations;
 - .7 participation in at least one marine-related management system audit; and
 - .8 effective communications with shipboard staff and senior management.

4 Experience

- 4.1 Designated Person should have experience to:

- .1 present ISM matters to the highest level of management and gain sustained support for safety management system improvements;
- .2 determine whether the safety management system elements meet the requirements of the ISM Code;
- .3 determine the effectiveness of the safety management system within the company and the ship by using established principles of internal audit and management review to ensure compliance with rules and regulations;
- .4 assess the effectiveness of the safety management system in ensuring compliance with other rules and regulations which are not covered by statutory and classification surveys and enabling verification of compliance with these rules and regulations;
- .5 assess whether the safe practices recommended by the organisation, administrations, classification societies, other international bodies and maritime industry organisations to promote a safety culture had been taken into account; and
- .6 gather and analyse data from hazardous occurrences, hazardous situations, near misses, incidents and accidents and apply the lessons learnt to improve the safety management system within the company and its ships.

5 Company Requirements and Records

5.1 The company should provide training courses covering qualification, training and experience and the appropriate procedures connected to compliance with the ISM Code including practical training and continuous updating. The company should also provide documentary evidence that the designated person has the relevant qualification, training and experience to undertake the duties under the provisions of the ISM Code."



Directed Learning:

There is a suggestion in the *Costa Concordia* report summary extract that the DPA was at fault in some way. Do you consider that this criticism is valid? What more could or should the DPA have done?

Once you have done this, publish your brief thoughts on the module forum on the Learning Management System so we can share our findings and read what other participants have written.

1.6 Conclusion

The IMO is the primary source of conventions that apply in the maritime business and thus it is important for a superintendent to have a good working knowledge of all the relevant conventions. This is particularly important with SOLAS and the ISM:

- SOLAS because it can be changed very quickly under the tacit acceptance method; and
- ISM because of the primary importance of the role of the DPA which is likely to be filled by the company superintendent.

The IMO has produced guidance on the qualifications, training and experience that a DPA is expected to have and given the close relationship in tasks between the DPA and the superintendent this guidance could and should be applied to superintendents.

2. EMERGENCY PLANNING



Learning Outcomes:

On successful completion of this chapter, you will be able to:

- appreciate the need for a properly designed company emergency response policy;
- explain the importance of practical training experience for given emergency events; and
- give notice of the accident to flag and coastal states in accordance with the IMO Casualty Investigation Code.

2.1 *Introduction*

While it may seem counterintuitive to plan for emergencies it is now recognised that being properly prepared for an emergency will minimise its effect to a great extent. Instead of chaos, the shore side and ship side should be calm and organised with pre-arranged teams designated to handle everything from rescue organisations, salvors and marine investigators to the press.

2.2 *Preparation, Planning and Implementation*

2.2.1 *Overall Plan*

While it would be wonderful to assume that a maritime disaster will never happen and thus not to prepare for it there is much regulation that effectively requires both the ship and the shore side to be prepared irrespective of the perceived risk.

Given the dramatic potential of failing to be ready to handle a disaster there is now an automatic expectation that a company will have considered the potential risks and prepared accordingly to avoid loss of life and to minimise pollution. Everyone is surprised when a company or its staff do not behave in what is seen as a competent manner when a disaster occurs – everyone is expected to be ready and able to cope in disasters.

So, how is this achieved?

An example is the emergency response policy found on Dynacom Tankers website:

"Emergency Response Policy

It is company's policy to ensure that the company's organisation can respond at any time to hazards, accidents and emergency situations involving the ships.

The company, in order to identify potential emergency situations and prepare itself for promptly and efficiently responding to such situations:

Ensures that each ship is equipped with all necessary life-saving and firefighting appliances, security equipment and arrangements required by SOLAS/MARPOL/flag state.

Has developed and implements a safety drills programme.

Has developed:

A 'shore emergency response plan' and a 'ship-board contingency plan' providing instructions, guidelines and communication details for emergency response purposes to both shore-based personnel and sea-going personnel.

'Shipboard Oil Pollution Emergency Plans (SOPEP)' for each vessel, regarding on board mobilisation in case of emergency outside USA waters.

Vessel response plans for each vessel regarding vessel response in case of oil pollution, in USA waters.

Ensures that the above emergency plans developed are drilled and exercised.

The master has the final and overriding authority and responsibility to make decisions in respect to safety and security of the ship, her crew and the environmental protection, regardless of any commercial considerations and to request the company's assistance as may be necessary.

In case of an emergency, the master must decide as a matter of urgency whether assistance, including salvage assistance, is needed or if the situation can be handled using the ship's own resources.

The master should take whatever action is possible to remedy the situation. Once the master has decided that assistance is necessary, he should act promptly to request it from any available source using the most expeditious means at his disposal and keep the officials advised of his actions.

Prior to commencing any salvage operation, the master should seek to agree to a contract for assistance. Lloyd's Standard Form of Salvage Agreement, known as Lloyd's Open Form (LOF 2000), is the form most usually offered and should be agreed upon to avoid any delays.²⁷

This is an excellent overview and demonstrates a quality of approach that would be encouraged under the ISM Code. Indeed, the International Chamber of Shipping has commented that:

"Analysis of serious accidents in shipping had demonstrated that the personnel involved are usually highly trained, competent and experienced, and that the underlying cause of the accident, which could have been prevented, was a failure to follow established procedures."²⁸

Thus, it is generally recognised that plans and procedures for dealing with emergencies are essential, together with the training and drills, so that personnel are fully prepared and able to follow those procedures.

Senior management may suffer from the mindset that safety need not be considered so important when the ship and company are insured on the assumption that the insurer will respond.

However, insurance will not usually cover all the losses (the deductible or excess will still fall on the owner) and premiums or calls will increase after claims. An accident may attract a claim for negligence depending on the facts – and these can be very expensive to settle or fight.

²⁷ See

http://www.dynacomtm.com/index.php%3Foption=com_content&view=article&id=45:hse&catid=37:safetycategory&Itemid=11.html (accessed September 2015).

²⁸ Implementing an effective safety culture (ICS), IMO Symposium on the Future of Ship Safety, 2013.

A ship will not be trading while it is being repaired and thus is not generating any income. Accidents and even near misses can affect the company's reputation with charterers, shareholders, insurers and personnel including those at sea. And accidents will be likely to prompt an increase in port state and flag state scrutiny.

It has been estimated that the indirect financial cost of accidents are about three times those of the insurance claims for that same accident.²⁹



Directed Learning:

Draft a "Shipboard Contingency Plan" for a cruise ship that suffers a grounding. You can use the *Costa Concordia* summary extract as above as a source but you may need to do some additional research.

Once you have done this, publish your brief thoughts on the module forum on the Learning Management System so we can share our findings and read what other participants have written.

2.3 Communication

2.3.1 Knowledge

Open and honest communication is essential for the effective running of any complex system and a ship most certainly qualifies for that description. It is vital that everyone involved in both the shore side and ship side running of the ship feels sufficiently confident to report any safety concerns or ideas for improvement.

Further, it is also vital that there are appropriate communication systems in place and lines of command and reporting so that all personnel are properly informed and can respond appropriately during an emergency or accident.

The effect of a communication failure can be seen in both the *Costa Concordia* and the *Herald of Free Enterprise*. The events in the *Costa Concordia* are detailed above and the timings show the master's failure to act. The *Herald of Free Enterprise* capsized due to the bow door not being closed – this could have been avoided by better practice on board, proper communication on that particular voyage and generally, and proper shore management. The formal report on the capsizing states:



Case Study

It was reported in the Formal Investigation published on 24 July 1987 of the capsizing of the *Herald of Free Enterprise*,³⁰ that Captain John Michael Kirby, one of the team of ships' masters had sent memoranda to the chief superintendent expressing his concern at the reduction in numbers of the team of deck officers and the temporary nature of their tenure with the ship.

He cited that during the period from 1 September 1986 to 28 January 1987 a total of 36 different deck officers had been attached to the ship. He went on to comment in his memorandum of 28 January 1987:

²⁹ Implementing an effective safety culture (ICS), IMO Symposium on the Future of Ship Safety, 2013.

³⁰ Department of Transport Merchant Shipping Act 1894 MV *Herald of Free Enterprise*, Report of Court No 8074, Formal Investigation.

"The result has been a serious loss in continuity. Shipboard maintenance, safety gear checks, crew training and the overall smooth running of the vessel have all suffered..."

It is not clear whether he received a reply.

Of course, there may be a concern that such complaints or whistle blowing by crew members may not be as objective as they should be. However, returning to the *Herald of Free Enterprise* the Formal Investigation reports that there were four specific areas:

"in which the voices of the masters fell on deaf ears ashore."

Those areas were:

"Complaints that ships proceeded to sea carrying passengers in excess of the permitted number.

The wish to have lights fitted on the bridge to indicate whether the bow and stern doors were open or closed.

Draught marks could not be read. Ships were not provided with instruments for reading draughts. At times ships were required to arrive and sail from Zeebrugge trimmed by the head, without any relevant stability information.

The wish to have a high capacity ballast pump to deal with the Zeebrugge trimming ballast."

The masters made various suggestions and recommendations about fitting the fleet of ships with bow and stern water tight door closure indicators. There was much discussion but this suggestion was never actioned. The court commented:

"18.8 Enough has been said to make it clear that by the autumn of 1986 the shore staff of the company were well aware of the possibility that one of their ships would sail with her stern or bow doors open. They were also aware of a very sensible and simple device in the form of indicator lights which had been suggested by responsible masters. That it was a sensible suggestion is now self-evident from the fact that the company has installed indicator lights in their ships. That it was simple is illustrated by the fact that within a matter of days after the disaster indicator lights were installed in the remaining Spirit class ships and other ships of the fleet."

Interestingly, at para 58 of the Formal Investigation Captain JJ de Coverly, Principal Nautical Surveyor of the Department of Trade commented that the then current Merchant Shipping Regulations on reporting of accidents and dangerous occurrences could be too narrowly drafted. The court recommended that:

"Consideration should be given to enlarging that regulation to include every occurrence which is potentially hazardous to the ship or to any person on board."

This would have included the over carriage of passengers, and the concerns about the closing of the water tight stern and bow doors.

The *Herald of Free Enterprise* catastrophe was instrumental in prompting the development of the ISM Code.

2.4 Typical Emergency Situations

2.4.1 Examples

It would be unusual for an emergency situation on board a ship to have only one cause – such as fire. It is much more usual for the emergency to have a number of related causes; such as sinking, grounding, blackout and loss of life as in the *Costa Concordia*, or hull failure, sinking and pollution as in the *Erika*.³¹

That said, establishing what is or is not an emergency situation is helped by referring to the IMO Casualty Investigation Code (CI Code).³² Part 1 Chapter 2 of the CI Code gives various definitions, including:

“Marine casualty means an event, or sequence of events, that has resulted in any of the following which has occurred directly in connection with the operations of a ship:

- the death of, or serious injury to, a person that is caused by, or in connection with, the operations of a ship; or
- the loss of a person from a ship that is caused by, or in connection with, the operations of a ship; or
- the loss, presumed loss or abandonment of a ship; or
- material damage to a ship; or
- the stranding or disabling of a ship, or the involvement of a ship in a collision; or
- material damage to marine infrastructure external to a ship, that could seriously endanger the safety of the ship another ship or an individual; or
- severe damage to the environment, or the potential for severe damage to the environment, brought about by the damage of a ship or ships.”

While these are examples of actual casualties it is always possible that prompt and appropriate action will avoid a casualty and thus that it becomes what is referred to as a “marine incident”.³³ This is defined as:

“an event, or sequence of events, other than a marine casualty, which has occurred directly in connection with the operation of a ship that endangered or, if not corrected, would endanger the safety of the ship, its occupants or any other person or the environment. A marine incident does not include a deliberate act of omission with the intention to cause harm to the safety of a ship, an individual or the environment.”

Another way of considering what constitutes an emergency situation would be to list them as elements, for example:

³¹ *Erika* Report – source <http://eur-lex.europa.eu>.

³² Code of International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (Casualty Investigation Code), 2008 edition – Resolution MSC.255(84)E.

³³ Code of International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (Casualty Investigation Code), 2008 edition – Resolution MSC.255(84)E.

- Personal injury/death – passenger/stevedore/crew –
 - collision; and
 - dock contact/allision.
- Stranding/sinking.
- Explosion/fire.
- Pollution.

As mentioned above, most emergency situations would involve more than one of the elements listed above.

2.5 Shipboard Personnel Training for Emergency Situations

2.5.1 Relevance of Shore Side Training Relating to Emergency Management

There are two distinct areas of action in a shipping emergency:

- the shore side; and
- the ship board.

Thus, there are also two distinct training needs for emergency situations. Further, these distinct training needs also need to be designed to be related to each other so that both the shore and sea side have some knowledge of how the other base of operations has been trained to respond to the particular emergency situation.

While it would be feasible to provide the appropriate individuals with a handbook each and instructions to read and learn the contents this would not give anyone any experience of how to deal with an actual emergency.

The potential problem is that nerves and panic will often strike the individuals least expected to suffer from them and this can only be explored in either the real event or a drill designed to test everyone's training. Comprehensive and repeated training will also mean that everyone is sufficiently familiar with their own role to be able to perform it well enough to be part of the solution rather than part of the problem.

Under the ISM it is recognised that safety is a culture, a way of life that should be adopted by all those involved at any level in shipping. Following on from this it has become much more usual for all training to include safety drills such as man overboard or abandoning ship. As a development of training drills companies now also arrange for full emergency situation exercises which involve all the parties that would be involved in the particular scenario. So, shore side, ship side, insurers, surveyors, salvors and so forth are briefed and then involved in the exercise.

Returning to the *Costa Concordia*, it is now recognised as a result of this case that it is necessary to perform a muster drill for passengers immediately on departure from the port of embarkation not just within 24 hours. Another issue with the *Costa Concordia* was the strange failure of the ship's personnel to address the obvious problems with the ship – from the report summary it does seem that no-one could recognise that the ship was in desperate trouble, or if they did that no-one could take the appropriate action.³⁴

³⁴ *Costa Concordia* – MIT report on the safety technical investigation.

2.6 Procedure for Notification of Emergencies

2.6.1 MAIB – European and IMO Requirements

There will be at least two procedures for notification of emergencies:

- the first will be the procedure that applies to whoever has ownership of the actual emergency – usually the master of the ship; and
- the second will be the notification that needs to be made to the authorities depending on the level of the emergency.

The master will need to comply with whatever procedure has been set down by the company for the internal reporting of emergencies. There may be times when delaying taking action by insisting on reporting to the office first is highly unhelpful. The master of the *Costa Concordia* seems to have delayed giving notice of the emergency for reasons that are unascertained (see above).

The emergency response policy from Dynacom Tankers is very clear that it is for the master to decide whether he requires outside assistance or whether the emergency is something that the ship will be able to handle itself, then it is for the master to request assistance.³⁵ It will be essential that the master also makes contact or arranges to make contact with his office so that he can be provided with support and assistance in handling the emergency.

The approach adopted by Dynacom Tankers is in line with the modern safety culture where companies and their personnel establish targets for safety performance. Interestingly, the approach is also the traditional position that the master would hold. Before the development of easy international communications it was the master who had ultimate authority on board for the simple reason that he was usually unable to contact anyone else. These days it is easy to communicate with anyone anywhere but while this ease of contact should be used to improve safety whether or not it does will depend on the corporate culture.

As the regulation has developed, it has passed through three types of culture:

- The first was the culture of punishment where a scapegoat was sought to take the blame for any failure.
- The second was the culture of compliance where shipping was presented with sets of rules and regulations to follow and meet. However, the number of accidents in the 1980s, including the *Herald of Free Enterprise*, made it clear that compliance with regulations might not be enough to achieve safety and pollution prevention.
- The third type is the culture of self-regulation as promulgated by the ISM Code.

While it might be hoped that self-regulation or self-policing would be enough to achieve the safety culture sought it has become increasingly clear that a combination of all three types of approach is necessary as each type influences both company and individual behaviour.

The second type of notification is a formal requirement under the IMO for reporting of an emergency so that this can be investigated if necessary.

³⁵ See http://www.dynacomtm.com/index.php%3Foption=com_content&view=article&id=45:hse&catid=37:safetycategory&Itemid=11.html (accessed September 2015).

There are a number of IMO instruments that make it mandatory to report incidents.³⁶ These include the Casualty Investigation Code 2008 (CI Code)³⁷ which in many ways has harmonised the reporting requirements and various other aspects of casualty reporting and investigation as between the existing conventions. It is worth noting the comments in the CI Code itself regarding its adoption:

"Since the adoption of the first SOLAS Convention (when the IMO was formed in 1948), there have been extensive changes in the structure of the international maritime industry and changes in international law.

These changes have potentially increased the number of states with an interest in the process and outcomes of marine safety investigations, in the event of a marine casualty or marine incident, increasing the potential for jurisdictional and other procedural differences between affected states.

This code, while it specifies some mandatory requirements, recognises the variations in international and national laws in relation to the investigation of marine casualties and marine incidents. The code is designed to facilitate objective marine safety investigations for the benefit of flag states, coastal states, the organisation and the shipping industry in general."

Thus, it seems that the intention of the IMO in its introduction of the CI Code is to provide a touchstone instrument in which everyone can find guidance on what they need to report, how they should report it and the process of investigation to be adopted by all.

Part II Chapter 5 of the CI Code is entitled "Notification". Chapter 5 is mandatory because it is in Part II, and it provides that:

- 5.1 When a marine casualty occurs on the high seas or in an exclusive economic zone, the flag state of a ship, or ships, involved, shall notify other substantially interested states as soon as reasonably practicable.
- 5.2 When a marine casualty occurs within the territory, including the territorial sea, of a coastal state, the flag state, and the coastal state, shall notify each other and between them notify other substantially interested states as soon as reasonably practicable."

Chapter 5 goes on to provide that notification shall not be delayed for lack of information.

A substantially interested state is defined as a flag state, a coastal state, a state whose environment has been severely or significantly damaged, a state whose nationals lost their lives or received serious injuries, or has information at its disposal that the investigating state(s) consider useful or for some other reason establishes an interest that is considered significant for the investigating state(s).

At Chapter 5.4, the CI Code provides that the notification shall contain as much of the following information as is readily available:

- the name of the ship and its flag state;
- the IMO ship identification number;

³⁶ SOLAS Regulation I/21 and MARPOL 73/78, Articles 8 and 12, for example – see also MSC Circ.953 of 14 December 2000.

³⁷ Casualty Investigation Code 2008 at para 14.1, Chapter 14 of Mandatory Part II.

- the nature of the marine casualty;
- the location of the marine casualty;
- time and date of the marine casualty;
- the number of any seriously injured or killed persons;
- consequences of the marine casualty to individuals, property and the environment; and
- the identification of any other ship involved.”

Whichever state receives a notification first it is important for the success of any investigation that all concerned states work together and thus that each is properly notified. When an event occurs in international waters it is likely that the coastal state or flag state will be the first to hear about the casualty.

The coastal or port states will probably be the first to be notified where the event is a grounding or stranding. A substantially interested state is likely to be the first to be notified in the case of an accident being reported by a passenger on a cruise ship.

In 2014, the Marine Accident Investigators International Forum (MAIIF) worked with the IMO, the European Maritime Safety Agency, the MAIB, the US National Transportation Safety Board and other national agencies to produce a useful and rather comprehensive investigation manual.³⁸

This manual recommends that inter-state notification should happen as quickly as possible to allow discussion between the states so that decisions are made on the following questions listed by the MAIIF as being relevant to consider:

- “• whether to investigate;
- who will be the marine safety investigating state;
- the initial investigation strategy;
- the likely scope of the investigation;
- the initial practical measures and the investigating body best placed to carry them out;
- access to a ship and crew; and
- the use of another investigation body’s power of investigation”.³⁹

Whatever the final decision on which state performs the investigation it is the responsibility of the flag state to ensure that the IMO reporting procedure is met and that the final version of the marine safety investigation report is submitted to the IMO.

³⁸ Marine Accident Investigators’ International Forum – MAIIF Investigation Manual – can be found at: <http://www.maiif.org/maiif2/images/MAIIF%20Manual%202014.pdf>.

³⁹ MAIIF Investigation Manual, p 13.

The administration or investigating body, which would be the Marine Accident Investigation Bureau in the UK, should be able to receive notification of incidents on a 24-hour basis. Notice being given promptly and received promptly is essential for the preservation of evidence.

2.7 Identification of Potential Emergency Shipboard Situations

2.7.1 Different Situations on Different Types of Ships

There are examples above of the broadest generic types of accidents or incidents that can befall ships. However, there are many sub-divisions of these types. An example is personal injury cases where the sub-divisions could be slips and trips, personal equipment failure (or failure to use personal safety equipment such as a hard hat), ship's equipment failure, entering into restricted areas, burns and so on. It is possible to write a very long list quite quickly.

The problem with this is that it is impossible for any list to cover all and every eventuality, and the emergency status would depend on the severity of the event. So, any list must include some form of catchall provision.

Of course, the ideal situation would be that all potential shipboard emergencies have been fully identified in detail and this is certainly a goal to be aspired to. However, arguably a more efficient approach would be to consider a second layer of generic emergencies in the light of the action that is likely to be needed in order to deal properly with that particular emergency.

A particular disadvantage of identifying types of emergency on board in great detail is that this could persuade the crew and officers to concentrate on the classification of the emergency rather than use their expertise and training to handle the situation in front of them. Over-classification could deter flexibility of approach by the very people in the best position to solve the problem.

So, while it might be thought that the superintendent should dictate the identification of emergency ship board situations arguably a more important role and more useful approach is for him to work with the crew of a ship to identify the specific situations on that particular ship plying that particular trade. For example, a dry cargo bulk coaster will have a different list of identified dangers than a 60,000 dwt dry cargo tramp ship, just because of the different size of the ship. Again, cruise ships will all have different potential emergency shipboard situation lists because of differences in layout and size. That said, there is also the concern as mentioned above that over-specifying the list may impede flexibility of approach.

2.8 Establishing Procedures to Respond to Identified Situations

2.8.1 Tuned to Individual Ships

Should it be decided that the identified situations are to be listed in exhaustive detail then this will trigger the production of detailed procedures for responding to each situation. As mentioned above this may well not be the most effective way of encouraging the crew to deal with each situation as the actions to be taken may well be too prescribed and insufficiently flexible to allow the crew to think on their feet at the time of the event.

As has been commented,⁴⁰ the usual cause of an emergency is not lack of training or incompetence but rather failure to comply with procedures already set down. This would apply to the procedures set down to be followed before the emergency event but the procedures after the emergency event should also be followed to avoid making a bad situation worse such as occurred in the *Costa Concordia*.

⁴⁰ Implementing an Effective Safety Culture (ICS), IMO Symposium on the Future of Ship Safety, 2013.

Again, it will be for the superintendent to ensure that the trained crew have been trained in meeting the appropriate procedures for running the ship without reference to any emergency. Then he will also need to design or obtain designs for appropriate and constructive procedures after the emergency event.

Making the procedures too complex is likely to add a risk of inadvertent non-compliance – simply because the crew miss or forget a step or two in the specified procedure.

2.9 Emergency Management

2.9.1 Drills, Exercises and Safety Meetings

The main problem with emergencies is that people panic. They will panic less if they have a pattern to follow to maintain control – such as a specific procedure for that type of emergency. This process is well known in the armed forces.

So, once a potential type of emergency has been identified, and a procedure written for handling that emergency it is now time to practise. There are three parts to practising:

- drills for the particular crew;
- part of the crew;
- shore based team etc.

Exercises where all the sections of the crew and shore side join together to work through a particular scenario which usually includes other companies such as insurers, and safety meetings. Now, safety meetings could be used as a constructive debrief as well as a forum for sharing ideas on a dynamic safety improvement programme.

It has been recognised⁴¹ that well trained well drilled officers and crew can avoid the panic and mistakes of an emergency just because they are well trained. Emergency procedures and good training are essential. Being fully prepared for emergencies requires the practising and testing of emergency plans.⁴²

Drills and exercises have three main purposes:

- to check and test plans
- to develop the competency of the staff and give them practice in carrying out their roles in the plans
- to test well-established procedures.⁴³

The following statement explains very clearly the importance of holding exercises and the risks in relying on written procedures alone:

"It is important to hold exercises because planning for emergencies cannot be considered reliable until it is exercised and has proved to be workable, especially since false confidence may be placed in the integrity of a written plan."⁴⁴

⁴¹ See <http://www.maritimetraining.com/Product/Drills-Preparing-for-On-Board-Emergencies>.

⁴² See <https://www.gov.uk/guidance/emergency-planning-and-preparedness-exercises-and-training>.

⁴³ See <https://www.gov.uk/guidance/emergency-planning-and-preparedness-exercises-and-training>.

⁴⁴ See <https://www.gov.uk/guidance/emergency-planning-and-preparedness-exercises-and-training>.

For an exercise to be successful in encouraging the people involved that they are able to handle an emergency it is important that the exercise tests the procedures. The people should be properly trained beforehand so that they perform well in their roles and in the team. This will also build confidence and morale, both of which will assist in good performance in the exercise.

2.9.2 *Types of Exercises*

There are three main types of exercise:

- discussion-based;
- table top; and
- live.

It is also possible to run an exercise that combines elements of any of the three.

The choice of which one to adopt depends on the purpose of the exercise. It may also be affected by planning time and available resources such as availability of the ship and crew.

2.9.3 *Discussion-based Exercises*

Discussion-based exercises can be used as part of the process in finalising the emergency plan or procedure. However, they can be based on a finalised plan and used to introduce the staff and crew to it through discussion.

2.9.4 *Table Top Exercises*

These are based on simulation and usually have a timeline and realistic and demanding scenario. The staff should have already be trained in the plan or procedures and thus this format is useful for testing any weakness or gaps in the procedure.

2.9.5 *Live Exercises*

These are a fully live exercise using a given procedure or procedures.

These make excellent training events where the staff experience using the procedures in something close to a real event. This will help to develop confidence in their skills.

Live exercises require the most detailed preparation and thus tend to be expensive to set up.

It is worth noting that an ISM auditor may wish to be present at an emergency drill for the purposes of issuing a Safety Management Certificate (SMC) to a ship.

2.9.6 *Planning, Documentation and Records*

Both for the purposes of gaining the most from drills and exercises and demonstrating to an external auditor or investigator that the safety culture has been fully embraced it would be wise to keep detailed records.

In order to be complete these records should include notes of the development of plans and procedures, and notes on the success or otherwise of the drills and exercises including comments and suggestions from the participants. Detailed records of what drills and exercises have been held, including who has taken part and when should also be made and retained.

2.9.7 Safety Equipment Maintenance and Inspection

Safety equipment maintenance and inspection is a basic requirement of many international conventions and thus should be performed as a matter of course. A particular example is SOLAS which provides for fire protection, fire detection and fire extinction equipment to be present on board and kept in proper working order and certified as such. The primary responsibility for compliance with these requirements will be for the master to meet.

However, it is likely to be the superintendent that needs to check that such matters have been properly complied with so that there is no non-conformity with ISM. This is particularly important and should trigger planned internal audits on a regular basis as a matter of course.

2.10 Structure and Function of Emergency Response Teams

2.10.1 Introduction

It is generally recognised that emergency response teams in shipping will be based on the following structure:

- Command centre.
- Emergency team.
- Back-up squad.
- Technical team.

These groups will have responsibility for different tasks and will co-ordinate and cross reference with one another as necessary:

- **The Command Centre**

The command centre will usually be located on the bridge as the natural centre of all action, and base of communication both on board and with the shore. The master, as always, will be in command.

It is very important that a log is set up and that entries are made as the situation develops.

- **The Emergency Team**

The emergency team will be tasked with dealing with the emergency. Usually, the chief officer will lead the team for an emergency on deck while the second engineer will take charge for engine room emergencies. The duties of each person will have to be laid down and practiced for every emergency so as to avoid duplication, confusion and chaos.

- **The Support Team**

The purpose of the support team is to provide first aid and prepare to abandon ship if necessary. If there is no requirement for these two tasks then the support team will be directed to assist as and where they can be most use.

- **The Technical Team**

The technical team could also be called the engineer's team. This team will be tasked with maintaining the manoeuvring capability of the ship and auxiliary services such as light, as far as is possible in the circumstances.⁴⁵

⁴⁵ See <http://www.brighthubengineering.com/seafaring/49242-how-to-handle-an-emergency-on-a-ship/>.

- **The Shore Side Team**

This team will include specialists from head office and any relevant external organisations such as salvors or surveyors. The team is likely to be led by whoever has the authority to commit the company to various actions, such as a director, together with the company superintendent and support staff. The make-up of the shore side team is unlikely to change.

2.10.2 Emergency Response Teams in the Event of Flooding⁴⁶

The teams in this situation could be set up differently to take account of the particular event, for example:

- **Command Centre**

The command centre would still be the bridge. Its tasks would be to take overall control of the teams and perform the following actions:

- inform the shore side technical department and ISM Designated Person (DPA);
- assess the potential impact of the latest weather forecasts;
- reduce danger to crew, ship and cargo by damage control;
- consider jettison of cargo; and
- consider ballast/deballast etc to correct/maintain the stability of the ship.

- **Emergency/Damage Control Team**

This would include the first mate and second engineer together with members of the engine room crew and deck crew members such as the bosun and ABs. This team would be tasked with the following actions:

- conduct visual inspection of damage and report to command centre;
- check for oil pollution and act accordingly;
- take all ballast, bilge and fuel tanks sounding;
- check stability criteria and stress predictions for present and worst anticipated condition;
- effect damage control and ensure adequate stability; and
- ensure cargo is intact and all water tight door and ventilators shut.

- **The Support Team**

The support team would be tasked with the following actions:

- provide first aid;
- prepare lifeboats; and
- assist as required.

⁴⁶ See <http://www.brighthubengineering.com/seafaring/53510-ship-flooding-emergency-procedures/>.

2.10.3 Emergency Response Teams in the Event of Fire/Explosion

Fire might follow an explosion, for instance where a container explodes and a fire then grips the rest of the cargo, or a fire might cause an explosion such as where a fire starts somewhere on board and then reaches something that would explode – such as gas tanks.

It is necessary to consider whether the fire has started when the ship is at sea or alongside, and to take appropriate action such as evacuate those working the cargo when the ship is alongside.

The following is a list of suggested tasks for each ship based team:⁴⁷

- **Command Team Duties**

- Fix the ship position and record all movements/events.
- Compile communication reports and monitor weather conditions.
- Inform the technical department and Designated Person Ashore (DPA) and advise them of the status.
- Determine the possibility of sinking, breaking up or capsizing.
- Broadcast a distress signal as appropriate.
- Inform the relevant authorities and ask for shore assistance as appropriate.

- **Emergency Team Duties**

- Chief officer is to be in charge of any deck emergency.
- Second engineer to be in charge of any engine emergency.
- Identify and assess the source and report to command centre.
- Contain and extinguish the fire.
- Check for oil pollution and act accordingly.
- Check stability criteria and stress.
- Assess extent of damage to vessel/cargo.

- **Support Team Duties**

- Provide first aid.
- Prepare life boats.
- Shut all watertight door and vents.
- Assist as directed.

⁴⁷ <http://www.brighthubengineering.com/marine-engines-machinery/49824-emergency-action-plan-for-fire-explosion-on-ships/>.

- **Engineer's Team Duties**

- Attend to ship's engine room services and controls.
- Report the status of main engine and auxiliary equipment to the command centre.
- Stop vents and isolate electrical supply if required.

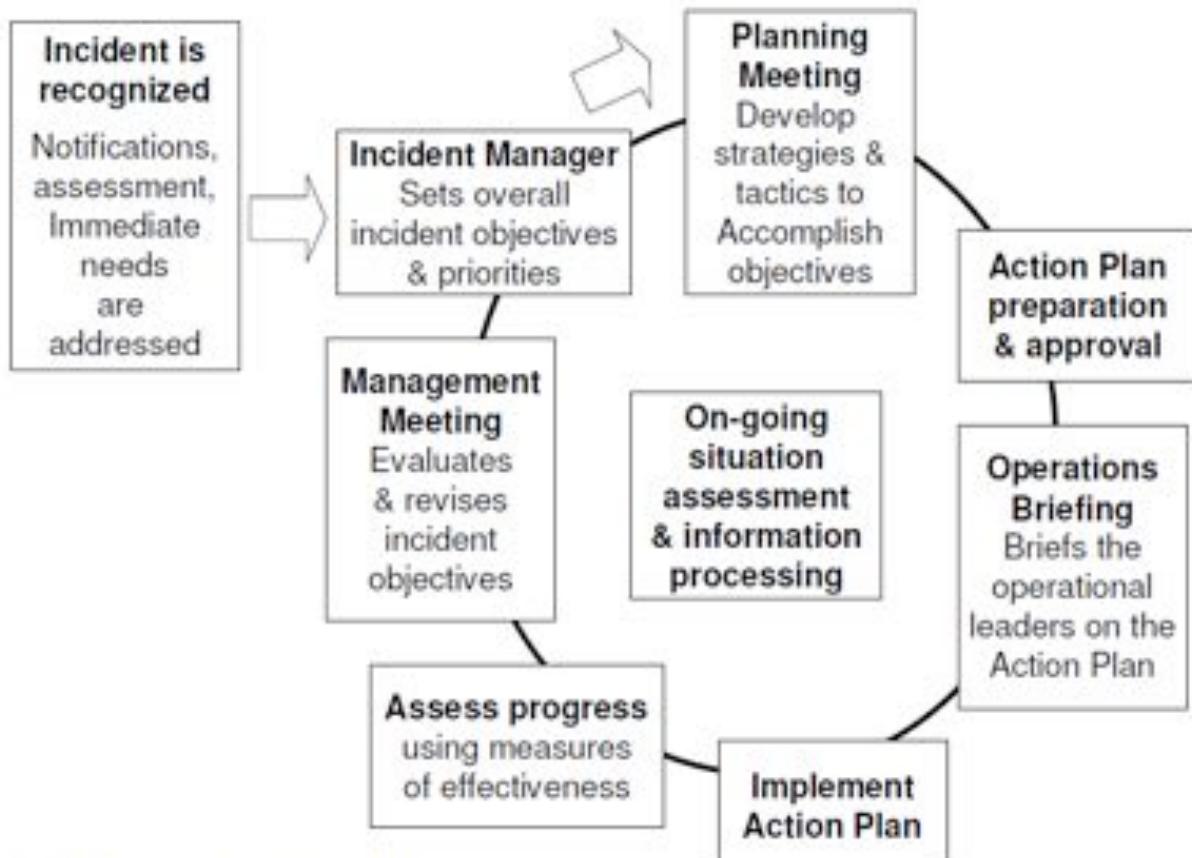


Directed Learning:

There has been a bad accident in the engine room which has left a crew member with burns, severe lacerations and a suspected broken leg. He is unconscious.

Consider what action the emergency response team should take as a whole, and who in the team would perform which action. You may need to do some additional research.

Once you have done this, publish your brief thoughts on the module forum on the Learning Management System so we can share our findings and read what other participants have written.



U.S. Coast Guard, 2002

Figure 4
An example of a generic incident plan

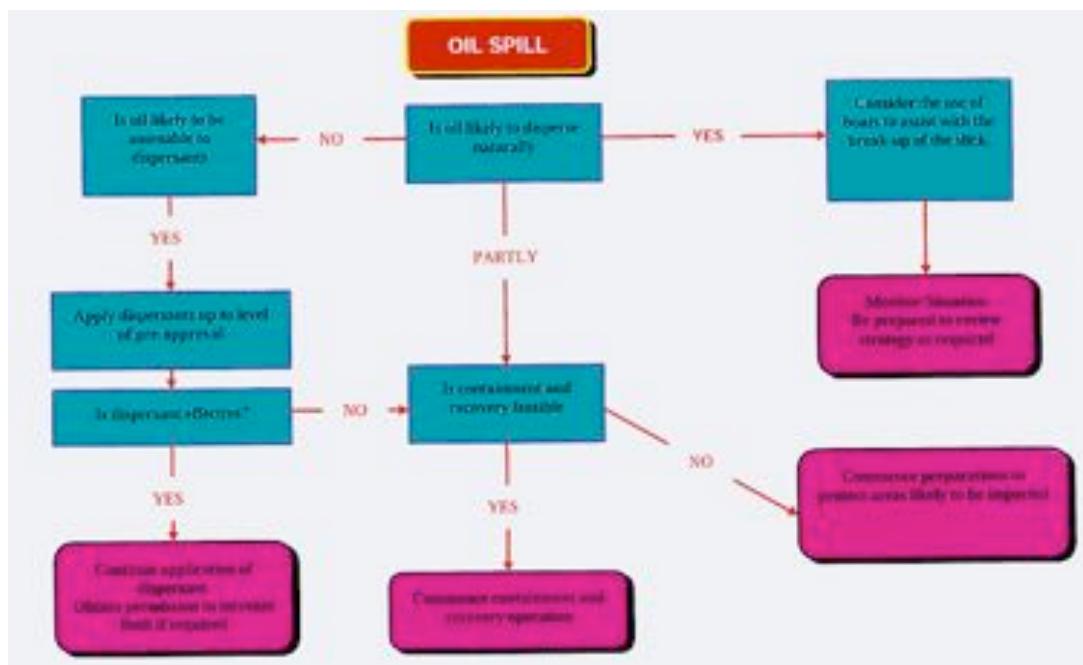


Figure 5
An example of an oil spill response plan
<http://www.ukmarinesac.org.uk>

2.11 Conclusion

This chapter has included:

- a review of types of emergencies;
- the importance of practical training;
- the method of notification to a flag and coastal state;
- the IMO CI Code; and
- the importance of emergency response training.

While many companies will plan to run their own emergency response training, there is the option to outsource this task by employing an external provider. For example:

- Lloyd's Register provides Ship Emergency Response Service (SERS); and
- DNV provides ERS (Emergency Response Service).

These organisations will provide support in the event of an emergency including providing highly experienced staff to attend the incident site.

3. ACCIDENT INVESTIGATION



Learning Outcomes:

On successful completion of this chapter, you will be able to:

- understand the reasons for and process of a safety investigation of an accident;
- understand the investigator's powers to investigate; and
- appreciate the importance of stakeholders.

3.1 *Introduction*

When the event or accident is serious then as mentioned above it will be investigated. The most important aspect of an investigation is that it is purely for the purpose of finding out if any lessons can be learned from the accident that will improve safety of both ships and the environment in the future.

Perhaps the best way to understand the process of accident investigation is to review a real event: the incident of the *Jolly Nero* contacting with the dock and port tower at Genoa. This was a major incident where the ship contacted the dock and knocked down the port control tower causing deaths and, therefore, would be investigated.

- The first consideration is which flag state will be conducting the investigation?
- The incident occurred in Italy and thus in Italian territory but what flag is the ship?

The Casualty Investigation Code⁴⁸ states:

"Flag states agreement with another substantially interested state to conduct a marine safety investigation.

7.1 Without limiting the rights of states to conduct their own separate marine safety investigation, where a marine casualty occurs within the territory, including territorial sea, of a state, the flag state(s) involved in the marine casualty and the coastal state shall consult to seek agreement on which state or states will be the marine safety investigating state(s) in accordance with a requirement, or a recommendation acted upon, to investigate under this Code."

However, here the flag of the ship is also Italy and thus there are no possible discussions between states as to which will investigate – Italy will be the investigating state.

The investigating team will attend the site and arrange meetings with selected stakeholders, such as the owners and the port authority.

However, this will be a sensitive investigation where emotions will be running high because it is an Italian ship that has crashed into a port control tower in an Italian port with the deaths of seven and two missing.

It will almost certainly be the case that the Italian police will be looking for reasons to arrest and charge the master, members of the crew and possibly executives in the owning company and thus it will be necessary for the investigating team to work alongside the criminal investigation.

⁴⁸ IMO Casualty Investigation Code MSC 84/3, Chapter 7.

The potential difficulties are that the aims of the two investigations are very different:

- the criminal investigation is looking for a culprit; whereas
- the marine investigation is set up to find out what went wrong and how to stop this in the future.



Figure 6
Italian Coast Guard photo of collapsed port tower

With this case there are a few additional issues to review – in particular there is a video available on the internet of the ship, the *Jolly Nero*, with tugs in attendance not making the turn and hitting the port tower. This video seems to have come from the port CCTV. Once the video had become easily available it was open to all to comment and pontificate on the causes of the accident.

Of course, nearly all these people had no access to the ship or the crew and thus had no access to the evidence held there.

Another factor that has been mentioned was the placement and building of the port tower. It was built exactly at the point where any ship overshooting the turn would contact the dock. Further, there was little additional protection of the foundations of the tower, it seems to have been just placed on the wharf.

In these circumstances, the various key stakeholders may be taking positions regarding the causes of the accident, who leaked the video to the web and so forth. It is important for the safety investigators to be very aware of the status of the various key stakeholders and the perception of the general public regarding the accident. A further factor with the *Jolly Nero* is that this accident happened shortly after the *Costa Concordia*. The press at the time was particularly unkind to Italian shipping.

So, the cultural aspect of the *Jolly Nero* accident and the existence of criminal proceedings are two issues which would be relevant to the safety investigation.



Figure 7

<http://www.qcaptain.com>

In dealing with stakeholders, even in very sensitive situations, it is important to be pleasant, reasonable, polite and firm. It can be put to the stakeholders that cross referencing the criminal and safety investigations may well be useful and constructive for all parties.

Irrespective of the right given to the investigator to investigate under the Casualty Investigation Code (see further below) it might be necessary for the investigator to make the point clearly and firmly that he is entitled to access to people and information with reference to the investigation and to compel attendance.

Despite the ease of finding the information it is still not fully appreciated that the purpose of the safety investigation is to find out what happened, how and why it happened but not to apportion blame. This is stated in the Casualty Investigation Code at Part 1, Chapter 1 at 1.2:

“1.2 A marine safety investigation should be separate from, and independent of, any other form of investigation. However, it is not the purpose of this Code to preclude any other form of investigation, including investigations for action in civil, criminal and administration proceedings. Further, it is not the intent of the Code for a state or states conducting a marine safety investigation to refrain from fully reporting on the causal factors of a marine casualty or marine incident because blame or liability, may be inferred from the findings.”

However, the position with the US Coast Guard is rather different as they are permitted to allocate liability or blame and further to enforce their decisions.

Once the investigation has established what happened and how, the investigators will assess the information with the aim of providing recommendations on safety that will help to avoid this situation happening again.

The final report is not to be used as a matter of course in any other investigation. However, it can be relied upon if that is ordered by the court itself. Thus, it could be utilised in criminal proceedings if that was so ordered.

It is absolutely vital that all the stakeholders are fully aware of the function of the safety investigation, the fact that it is independent of any other investigation and that there is unlikely to be any action as a result of that report.

Consider the situation in the *Jolly Nero* and the *Costa Concordia* where there was loss of life and the eager pursuit of the masters in both cases by the media to start with.

It is important that the investigators and the team are personable, approachable, relaxed and friendly to encourage easy communication with everyone that they might need to deal with. This can vary from the shipowner and lawyers to grieving families.

While the investigators should not give any impression of being arrogant or supercilious it is also important that anyone dealing with them is aware of their experience in the maritime field. That said the investigators do need to be understood as knowledgeable and experienced so that they are respected by their peers which will facilitate good communication with everyone involved in the investigation.

In an MAIB investigation the investigators would be provided with powers to require attendance and the provision of information:

"8(7) Any person mentioned in regulation 6(1) or (2) as well as any other person who is in possession of information requested by an investigator for the purposes of paragraph 6 shall provide such information to the best of their ability and knowledge."⁴⁹

Regulations 6 (1) and (2) reads as follows:

"6(1) When an accident occurs the following persons associated with the ship shall notify the Chief Inspector as soon as practicable following the accident and by the quickest means available –

- the master or, if the master has not survived, the senior surviving officer; and
- the ship's owner unless they have ascertained to their satisfaction that the master or senior surviving officer has reported the accident in accordance with sub-paragraph (a).

6(2) In addition to any notification made under paragraph (1) the following persons shall notify the chief inspector as soon as practicable and by the quickest means available any accident of which they are aware –

- in the case of an accident within or adjacent to the limits of any harbour, the harbour authority for that harbour
- in the case of an accident on any inland waterway in the United Kingdom, the person, authority or body having responsibility for that waterway; or
- an official of the MCA in respect of an accident within United Kingdom waters.

6(3) A person making a notification in accordance with paragraph (1) or (2) must, in so far as is practicable, include the information set out in the schedule."⁵⁰

⁴⁹ The Merchant Shipping (Accident Reporting and Investigation) Regulations 2012 – SI 2012 No 1743.

⁵⁰ The Merchant Shipping (Accident Reporting and Investigation) Regulations 2012 – SI 2012 No 1743.

Of course, it is all very well having powers to require attendance and information but what if someone simply refuses to do so?

The Merchant Shipping (Accident Reporting and Investigation) Regulations 2012 – SI 2012 No 1743 provides penalties for failure to comply:

"19(1) A person is guilty of an offence if –

- being a person mentioned in regulation 6(1), (2)(a) or (b), they fail without reasonable cause to report an accident as required by regulation 6; or
- being a person referred to in paragraph (a), they fail without reasonable cause to provide information as required by regulation 6(3); or
- they falsely claim to have any additional information or new evidence pertaining to any accident and is liable on summary conviction to a fine not exceeding level 5 on the standard scale."

These powers have been introduced at state level following from the IMO requirement in the Casualty Investigation Code that:

"Powers of an Investigation

All states shall ensure that their national laws provide investigator(s) carrying out a marine safety investigation with the ability to board a ship, interview the master and crew and any other person involved, and acquire evidential material for the purposes of a marine safety investigation."⁵¹

⁵¹ Casualty Investigation Code, Chapter 8.

Actions on notification



Plan to gather information

Consider potential sources of information.



Consider level of inquiry

Is the casualty a very serious casualty as defined?

If yes – marine safety investigation.

If no – decide on level of investigation and/or appropriate response.

Options – marine safety investigation even if not very serious casualty.

Preliminary assessment.

No investigation necessary.



Notify others

Notify substantially interested states.

Discuss and decide which state will be the marine safety investigating state.

Advise all interested parties.

Establish contact with next of kin, if appropriate.

Identify any other interested parties and notify them, if appropriate.

Check that superiors are aware of progress of safety investigation.

Consider whether or not a formal press release might be helpful.



Directed Learning:

Identify the stakeholders for the *Jolly Nero* investigation and assess their importance to this investigation as it is carried out. You may need to do some additional research.

Having done so post your brief comments on the Learning Management System so we can share our findings and read what other participants have written.

3.2 Conclusion

Accident investigation is a huge subject with much law to learn and appreciate. This can only be a brief introduction but the student could read the CI Code which can be found on the IMO website for further information and details on how an investigation is carried out

It is particularly important to appreciate that these investigations are safety investigations and only intended to establish what happened and why but not to apportion liability or blame. That is for the courts.

4. HANDLING THE MEDIA



Learning Outcomes:

On successful completion of this chapter, you will be able to:

- appreciate the importance of media preparation and planning;
- understand the concept of crisis management; and
- draft a press release.

4.1 Preparation and Planning

Hopefully a shipowner will never experience a major event that involves the media or press. However, it is always a possibility and thus it is wise for the shipowner and/or his team (including the superintendent) to either formulate a plan for handling the media/press or to employ a professional media planner. In the event of major accidents, it is usual for a media planner and/or PR company to be retained by the shipowner and/or their insurance team on their behalf.

No matter who drafts it a media plan should take account of the likely interest in the accident. It must be recognised that information must be handled in a manner that takes account of the speed and ease of communication through social media.

Perhaps a web page, page on Facebook and a Twitter account should be set up to provide the public with the information that can be given out. Certainly, giving any impression at all that the shipowner has something to hide will be counterproductive.

An example of the speed of communication through social media is the *Costa Concordia*. It leaked almost immediately that a previous and recently retired master of the ship lived close to where she foundered.

It was surmised by the press that the current master took the ship so close to a dangerous shore in the dark and at high speed purely to acknowledge the retired master. Of course, the press and general public vilified the current master and the blame for the whole accident promptly fell on him.

However, the report that has just been published by the Italian Ministry for the Infrastructure and Transport includes much commentary that the situation on the bridge was much more complicated than originally thought, and that other officers on watch could have and should have taken action to prevent the accident.

Further, problems included the total failure of electrical power almost immediately after the stranding thus making it much more difficult for anyone to escape from the ship.

4.2 Crisis Management

Crisis management has been defined as the process by which an organisation deals with a major event that threatens to harm the organisation, its stakeholders or the general public. The study of crisis management originated with the large-scale industrial and environmental disasters in the 1980s such as Bhopal.⁵² It is now considered to be the most important process in public relations and thus must be part of the preparation and planning for handling the media.

⁵² Shrivastava, P, Mitroff, II, Miller, D and A. Miglani, "Understanding Industrial Crises", *Journal of Management Studies*, 1988, 25, 4, 285-304, ASIS International, "Organisational Resilience: Security, Preparedness, and Continuity Management Systems Requirements with Guidance for Use, ASIS SPC.1-2009, American National Standard", 2009.

Three elements are common to a crisis:

- (a) a threat to the organisation;
- (b) the element of surprise; and
- (c) a short time in which decisions must be made.

Part of a crisis management plan will be to prepare contingency plans in advance to make sure that an organisation is appropriately prepared for a crisis. This will include effective communication management.

4.3 Effective Communication Management

The crisis management plan should include a list of people who are designated to speak publicly about the crisis. Handling the media is part of the picture but statements to staff should not be forgotten and it is important that the information is accurate. Misleading or manipulated information tends to be found out quickly and will only exacerbate the situation.

The first few hours after a crisis occurs are vitally important in the handling of the whole crisis effectively so taking charge of information and providing appropriate statements is essential. A couple of examples of different approaches in handling the media follow:

"In 2010 Procter & Gamble Co called reports that its new Pampers with Dry Max caused rashes and other skin irritations 'completely false' as it aimed to contain a public relations threat to its biggest diaper innovation in 25 years. A Facebook group called 'Pampers bring back the OLD CRUISERS/SWADDLERS' rose to over 4,500 members. Pampers denied the allegation and stated that only two complaints had been received for every one million diapers sold. Pampers quickly reached out to people expressing their concerns via social media, Pampers even held a summit with four influential 'mommy bloggers,' to help dispel the rumour. Pampers acted quickly and decisively to an emerging crisis, before competitors and critics alike could fuel the fire further."⁵³

"On March 24, 1989, a tanker belonging to the Exxon Corporation ran aground in the Prince William Sound in Alaska. The *Exxon Valdez* spilled millions of gallons of crude oil into the waters off Valdez, killing thousands of fish, fowl, and sea otters. Hundreds of miles of coastline were polluted and salmon spawning runs disrupted; numerous fishermen, especially Native Americans, lost their livelihoods.

Exxon, by contrast, did not react quickly in terms of dealing with the media and the public; the CEO, Lawrence Rawl, did not become an active part of the public relations effort and actually shunned public involvement; the company had neither a communication plan nor a communication team in place to handle the event – in fact, the company did not appoint a public relations manager to its management team until 1993, four years after the incident; Exxon established its media centre in Valdez, a location too small and too remote to handle the onslaught of media attention; and the company acted defensively in its response to its publics, even laying blame, at times, on other groups such as the Coast Guard. These responses also happened within days of the incident."⁵⁴

⁵³ See <http://www.reuters.com/article/2010/05/07/us-procter-pampers-idUSTRE6457AH20100507> (accessed September 2015).

⁵⁴ Pauly, JJ and Hutchison, LL (2005), "Moral Fables of Public Relations Practice: The Tylenol and *Exxon Valdez* Cases", *Journal of Mass Media Ethics* 20(4): 231-249.

While information is essential it is also vital that a spokesman preserves the integrity of the organisation, and that the privacy of individuals involved is protected. This is particularly important where there is loss of life, or actions or omissions that might give rise to a criminal or civil court case.

Again, it is vital that any confidential information is protected, such as:

- other companies;
- ships; and
- manufacturers of failed equipment.

The Job Aid⁵⁵ lists the content of a typical press release:

- What happened.
- Where it happened.
- When it happened.
- What the immediate consequences were.
- What can still be expected to happen.
- Time and location of any press conference.

As can be seen, this is highly factual and uncontroversial in nature which is exactly what should be intended by providing this information to the press. The difficulty with restricting information is that in this age of very quick international communications the press and general public will tend to draw their own conclusions and fill in any perceived gaps with their own thoughts.

4.4 *Training and Practice*

Training may be possible in house, however, wholly unintentionally the simulations and scenarios can be too simplistic or too tuned to the particular company. A potentially better option is to retain external specialist exercise designers who have no relationship with the team.

More will be learned from the exercise if a thorough debriefing is held following a simulation exercise. It is to be hoped that everyone involved will use this learning process to gain so that a real crisis can be handled as effectively as possible.

In practice, any training in handling the media should be introduced as a live part of an exercise that involves the ship, the shore side, insurers and so on. Also, it may be an option to invite a journalist to participate in the exercise.

4.5 *Conclusion*

This is a brief introduction to the subject of handling the media in what are likely to be rather awkward circumstances immediately following a major accident. The intention has been to cover the need for openness, a planned response, and to include examples of how not to handle the media.

⁵⁵ The MAIIF/IMO Job Aid at <http://www.maiif.org/images/JOB%20AID%20V.6%20IMO.pdf> (accessed September 2015).

**Directed Learning:**

Consider the *Costa Concordia* case and draft a media plan and press notice for release immediately after the head office has been advised that the event has occurred.

Once you have done this, publish your brief findings on the module forum on the Learning Management System so we can share our findings and read what other participants have discovered.

5. CONCLUSION

This module of this course follows on from Modules 4 and 5 where the student is introduced to the international conventions related to shipping. Here, the approach is to consider the implied obligations on the superintendent including the likelihood that he will be expected to take on the role of the Designated Person Ashore.

The module then reviews the superintendent's role in planning for handling emergencies, his role in ship emergencies and finally there is an overview of the process of accident investigation. It is important to remember the potentially different levels of responsibility that may apply to a superintendent in one company compared with that in another.

However, the role of a superintendent has generally been accepted to be a conduit between the ships, where he will understand the issues arising at sea because he will have been there, and the shore side where he now works.

The role of the DPA can be used as a good guide to the role of the superintendent in terms of the knowledge and experience required to be able to carry out the tasks to a high standard. The potential conflicts in the role of the DPA, before the IMO guidance, are addressed by Dr Phil Anderson. It may well be useful to read the article – it is not long.

Lastly, we visit the thorny issue of handling the media.

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