



Driving Safety Culture

Identification of Leadership Qualities for Effective Safety Management

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Executive Summary

The Maritime and Coastguard Agency (MCA) commissioned Arthur D. Little, supported by the Institute of Maritime Law at Southampton University, to carry out this research project into safety leadership. The objectives of the project were to:

- Develop a set of core leadership qualities that have a positive influence on safety culture in the shipping industry
- Identify both constraints and enablers for bringing about improvements
- Develop guidance material to assist in improvement of safety leadership

The scope included passenger, dry cargo and tanker vessels registered under the Red Ensign.

Data was gathered by means of literature review, and most importantly discussions with 65 maritime leaders and crew, and representatives of shipping organisations such as the Maritime and Coastguard Agency, Marine Accident Investigation Branch and Nautical Institute. The methodology included an initial issues analysis and a well-proven analytical approach known as “the Unwritten Rules of the Game” to identify hidden, implicit barriers as well as explicit barriers.

Strengths

There are seven main areas where existing strengths have been identified in respect of safety leadership:

- **Commitment** to safety is generally high
- The **ISM Code** has a positive influence on safety management
- **Some companies** are providing effective safety leadership, although there is considerable variation
- The **Master is generally well-regarded** as ‘the’ leader in safety
- **MAIB** is perceived by those interviewed for this study to be playing a positive leadership role, although of course its remit is limited to only one specific aspect of leadership, i.e. accident investigation
- **Communication methods** have improved and can be supportive of good leadership
- There are some **examples of good training** especially in relation to practical and physical safety issues

Barriers Towards Effective Safety Leadership

There are five main areas where barriers, both implicit and explicit, have been identified (refer to the main text for illustration of cause and effect, unwanted side-effects and enablers to overcome barriers):

1. Ship-Shore Interface

The effectiveness of management between the ship and shore differs significantly between companies. When managed well, there is open dialogue between ship and shore, and usually some rotation of ship and shore personnel to gain mutual trust and respect. In such cases, shore management provides a valuable and consistent level of oversight of company operations at sea. However, in some cases there is a perception that there is excessive interference from shore staff who lack practical experience, which undermines the authority of the Master as leader, and creates a feeling of resentment and low morale. A perceived increase in new standards and regulations (largely in-company rather than external) is also seen as, in some ways, undermining the Master's position.

2. Resources and Costs

Financial pressures are widely perceived to be driving reductions in crew sizes to a bare minimum, which combined with greater requirements for reporting and paperwork means that long working hours and fatigue are common complaints. Extensive use of lower cost multinational crews also creates additional leadership challenges.

3. Industry Structure and Leadership

Industry leaders have an important role to play in encouraging ship operators to raise their standards of safety and to develop an improving safety culture. There is scope for some improvement in encouraging some Flag States to implement the conventions that they signed up to at IMO. Within the UK, MAIB reports are highly regarded, but there is no means of enforcing the recommendations on ship owners, which means that the lessons learnt from the investigations may not be realised in practice.

4. Competence Management

There is more emphasis on technical skills than on leadership abilities in the training provided and in promotion criteria through the ranks to Master. Training quality is generally regarded to be low, suffering in particular from cost reduction drives which put pressure on training providers to reduce the scope and length of training courses.

5. Standards and Implementation

The ISM Code is regarded as providing a good basis for safety management. However, the extent of its implementation, and the implementation of other standards, is a widely held concern. Generally, ISM audits and statutory surveys are also widely perceived to be of very limited benefit in helping to drive forward positive changes in safety management and leadership.

Comparison with Other Industries

A comparison of the findings of this research with the leadership issues in other industries shows that the maritime industry, although in some respects faring well, presents some unique challenges by the very nature of its diverse and complicated structure.

- **Local leadership culture:** at the local level, leadership is a tradition in the maritime industry, and in this sense the role of the leader is well embedded. The natural division into manageable units - ships - means that leadership is in to some extent very natural and goes without question. In comparison, the rail industry has no such embedded leadership at this level.
- **Industry leadership:** the greater challenge in the maritime industry is providing more consistent leadership practices at the macro level; across a fleet of ships within one company, and at the wider level, across a Flag State and across International boundaries. Recent drivers to provide leadership from the shore (ISM and corporate governance) introduce a new set of challenges. By comparison, the rail industry has suffered from a lack of strong leadership since privatisation, and has seen numerous reorganisations in an attempt to create a competitive market whilst retaining overall control and is currently going through yet more changes - most notably integrating safety regulation and financial control into one body.
- **Regulation and standards:** in the maritime sector, the rules for the construction, maintenance and operation of ships are governed by international conventions but by comparison to rail and aviation these are enforced in a less coordinated manner. The maritime industry has a tradition of the leader at the local level, compared with, for example, the rail industry which has a strong tradition in rules and standards that set a more prescriptive code for operating safely. Only since the introduction of the ISM Code are individual shipping companies required by law to establish a Safety Management System. In aviation, the International Civil Aviation Organisation (ICAO) is responsible for ensuring that international standards and practices are adopted and has recently established an auditing function of the 188 member states.

- In the UK the Civil Aviation Authority (CAA) provides industry safety, economic and technical regulation with a remit that covers commercial aspects, training and the certification of personnel. Unlike most other national regulatory bodies, the Civil Aviation Authority is funded entirely by the commercial air operations it is charged to oversee. Recently, the European Aviation Safety Agency (EASA) took responsibility away from the EU National Authorities for the airworthiness and environmental certification of products, parts and appliances with rules for continuing airworthiness to be implemented at staged intervals over the next five years.
- **Financial constraints:** one barrier to safety leadership that is common to the maritime and rail industries is the constraint imposed by limited financial resources. Drives to reduce costs are a common ongoing theme on the railway - the current theme may be summarised as delivering safety through reduced costs. By contrast, the aviation industry is growing four times faster than the UK economy and the government has published a white paper to set out a strategic framework for the development of airport capacity in the UK over 30 years. No such similar planning takes place in the maritime sector: indeed successive UK governments have been criticised by ship operators for their evident lack of interest and support for UK shipping. Success for the maritime sector is subject to market forces is a consequence of the state of the freight market.
- **Accident investigation:** the maritime and aviation industries are similar with respect to accident investigation – both having an independent body responsible for investigating accidents to provide recommendations for improvements and to share lessons learned with the industry (the MAIB and AAIB respectively).
- **Training:** one of the key findings of this research is the lack of training provided in people management and strategic safety management. In this respect the maritime industry may be considered to lag behind the rail industry; strategic safety management training is available for all senior managers on an open enrolment basis. To date, more than 1,000 individuals have successfully completed the two-day learning programme. In the aviation industry, human factors training is compulsory for all staff involved in maintenance, from the sharp end to the most senior levels of management.

Core Safety Leadership Qualities

The study identified from the process of literature review, interviews and group discussions the following 10 qualities for effective safety leadership (refer to Chapter III for full description and analysis):

1. Instil respect and command authority
2. Lead the team by example
3. Draw on knowledge and experience
4. Remain calm in a crisis
5. Practice “tough empathy”
6. Be sensitive to different cultures
7. Recognise the crew’s limitations
8. Motivate and create a sense of community
9. Place the safety of passengers and crew above everything
10. Communicate and listen clearly

It is worth noting that different approaches will be required to identify these qualities in individuals and to encourage their development.

Conclusions

The following conclusions were drawn from the research project:

1. **Ten core leadership qualities** have been identified for effective safety leadership. These qualities are primarily geared towards the Master as a key leader for safety, but are also appropriate for ranks below the Master.
2. The interviews carried out for this study show that there are perceived **gaps** between desirable leadership qualities, and what is currently being exhibited. These primarily concern:
 - Clear two-way communication
 - “Tough empathy”
 - Openness to criticism
 - Empathy towards different cultures
 - Ability to create motivation and a sense of community
 - Knowing the crew’s limitations
 - Being a team player

3. However, there are other important **explicit barriers** to effective safety leadership that relate to the current structure of the industry, standards, practices and economic pressures. These barriers would need to be addressed irrespective of the personal qualities and skills of the Master. Key issues include:
- A perceived **undermining of the Master’s role** due to increased management from the shore with an associated increase in communications
 - **Financial constraints** that lead to, for example, shortfalls in the provision of training and reduced crew sizes
 - **Increased paperwork** as companies respond to legislation and increased numbers of inspections and audits. Combined with reduced crew sizes this leads to less time to actually work and increased fatigue
 - Shortfalls in **implementation of standards** and conventions including the ISM Code
 - Lack of enforcement in **implementing the recommendations of MAIB** reports and more generally in the sharing of information across the industry
 - Increased usage of **multinational crews**, which without effective training and careful management creates additional leadership challenge
 - A **low industry profile** and difficulties in retaining skilled staff who would be the leaders of tomorrow
 - Limited **effectiveness of ISM audits** and statutory surveys

Enabling factors to address these barriers are incorporated into the recommendations below.

4. The extent of **good safety leadership** (and more broadly good safety management arrangements) appears to be **highly variable** across companies. Safety management arrangements are generally most highly developed in the tanker sector, and least highly developed in the dry cargo sector. However, our research confirms that good safety performance can be achieved with a **committed leader** who has the key qualities described above, without necessarily having the most sophisticated management arrangements.
5. **The ISM Code** is well regarded as a key driver for improved safety leadership, but is perceived to have had a **limited influence through poor implementation** in companies without developed management systems. In some respects this is due to a failure to acknowledge the benefits of good safety management practice.

Recommendations

The following 10 recommendations and suggested actions are offered. It is helpful to remember in considering these recommendations that although safety leadership is the focus of this study, safety issues are largely inseparable from other leadership issues.

Recommendation	Ref Analysis
<p>R1 Introduce new skills training modules in Effective Leadership and People Management as standard practice for Masters and Officers across all sections of the maritime industry. This should also extend to shore-based managers. Modules should be general in nature (i.e. not safety-specific), but should include safety issues and examples as an integrated part of each topic. Training should be highly interactive and case study driven. As a starting point we consider that the training should include the following topics (refer to Part 3 for rationale)</p> <ul style="list-style-type: none"> • Personalising the leadership role • Communication • Understanding different cultures • Motivational skills • Understanding and empathising with your team • Team working • Dealing with conflicts • Coping with a crisis • Decision-making • Coaching, mentoring and appraisal • Authority, discipline and blame 	<p>II.5 Competence Management</p>
<p>Suggested Actions</p> <ol style="list-style-type: none"> 1. Review existing (extensive) Leadership and People Management training offerings provided to industry, e.g. in offshore, chemicals, rail, aviation, nuclear sectors. Adapt these to provide tailored modules for the maritime sector. 2. Introduce these modules as an integral part of the certification structure for Masters and Officers. 3. Use the 10 core qualities identified in this research as the starting point for structuring the Leadership module. 4. Use the Safety Leadership Guidance pack as a complementary reference document for Leadership and People Management training (see also R10). 	

Recommendation		Ref Analysis
R2	Encourage the industry to give a stronger commitment to demonstration of leadership and people management skills (including safety leadership) in formal performance appraisal for promotion into senior leadership positions, both shore- and ship-based. This should include development and integration of suitable appraisal criteria	II.5 Competence Management
Suggested Actions <ol style="list-style-type: none"> 1. Develop illustrative guidance on suitable criteria that could be used for performance appraisal – the 10 core qualities are a useful starting point. 2. Promote, as part of the appraisal guidance, the use of “360 degree” appraisal methods for Masters, in which Officers are asked to provide feedback on the Master as part of the process. 3. Consider the feasibility of specifying the use of suitable leadership appraisal criteria as part of the ISM Code. 		

Recommendation		Ref Analysis
R3	<p>MCA should review the current ISM audit process and methodology to improve its effectiveness in driving forward good safety leadership practice and ensuring better implementation of the principles of the ISM Code. The review should consider at least the following aspects of the audit process for both MCA’s own formal audits and internal audits conducted by operators:</p> <p>Level of prescription: ensure that checklists and protocols are used only as a support to the auditor, and do not over-prescribe requirements for compliance</p> <p>Training of auditors: ensure that auditors are adequately trained in management theory such that they can properly identify root-causes and assess management processes on their own merits in an investigative way, rather than focusing heavily on code compliance and paper-trails</p> <p>Process and approach: ensure that the audit process emphasises frequent and informal communication with the auditee, and includes best-practice sharing as a key feature</p> <p>Timing: consider introducing an element of unannounced “surprise” audits</p>	II.6 Standards and Implementation
Suggested Actions <ol style="list-style-type: none"> 1. Review and adapt ISM audit procedures as indicated above (note that we have not conducted a detailed evaluation of the audit process as part of this project). 2. Ensure that input is obtained also from auditors and operators on possible improvements. 		

Recommendation		Ref Analysis
R4	MCA should consider encouragement of more widespread use of confidential reporting systems (such as CHIRP and MARS) in order to capture near-misses more comprehensively and disseminate information more broadly across the industry	II.5 Standards and Implementation
Suggested Actions <ol style="list-style-type: none"> 1. Consider building on experience from other sectors, such as rail, in implementing confidential reporting systems on a broader scale. 		

Recommendation		Ref Analysis
R5	<p>The MCA should take steps to encourage and facilitate better participation by Industry Leaders in the drive to improve Safety Culture in shipping. This might in part be achieved through their presence at IMO and by encouraging more active dissemination and exchange of information across the industry. Much valuable data is produced by Industry leaders such as the MAIB, Port State Memoranda of Understanding countries and underwriters, which might be more widely circulated</p>	II.4 Industry Structure and Leadership
<p>Suggested Actions</p> <ol style="list-style-type: none"> 1. With respect to any recommendations which may be made by the MAIB after an accident investigation we suggest that: <ol style="list-style-type: none"> (i) The MCA should follow up these during ISM audits, in order to check whether they have in fact been implemented (ii) The MAIB should themselves follow up these points by checking not only with the operators, but also with others who may be concerned, such as Classification Societies and Underwriters 2. The MCA should continue to offer more visible support to the efforts of the IMO to encourage Flag State Implementation (of maritime conventions). The introduction of the model Audit Scheme to audit Flag States is a positive step. 3. Port State (e.g. Paris Memorandum) Annual Reports should be more readily accessible throughout the shipping world, including seafarers. Seafarers should also be encouraged to examine websites such as EQUASIS. 4. Underwriters, particularly P&I Clubs, produce much valuable accident analysis as well as loss prevention material. The MCA should encourage P&I Clubs to make this material (albeit generic) more widely available. 5. Possibly consideration could be given to the establishment of an Industry Forum (perhaps electronic) for the benefit of Red Ensign ship operators, where matters of mutual interest and concern could be discussed and where ideas, proposals and solutions debated. 		

Recommendation		Ref Analysis
R6	<p>MCA should proactively encourage good practice in communications and allocation of responsibilities across the ship-shore interface between Masters and Shore Managers. It is recommended that the following good practices, already in existence in some parts of the industry, are implemented more broadly:</p> <ul style="list-style-type: none"> • Rotation of ship and shore staff (e.g. Masters and Officers spending a period onshore and vice-versa) • Periodic ship-shore meetings at which safety issues (amongst others) can be openly discussed • Programme of regular ship visits by shore-based staff • Clearly-bounded and defined responsibilities and authorities for the Master to take decisions on key safety and other issues – avoiding the risk of dilution of responsibility resulting from excessive need to contact the shore for permissions and notifications 	II.2 Ship-Shore Interface
<p>Suggested Actions</p> <ol style="list-style-type: none"> 1. Incorporate these good-practices into the Leadership Guidance Pack. 2. Consider the extent to which the principles behind these good-practices could be enforced through regulation. 		

Recommendation		Ref Analysis
R7	<p>Encourage the industry to take proactive steps to improve staff retention, to avoid crucial loss of experience and knowledge (including safety experience and knowledge) in those who go on to hold senior or leadership positions. Key issues include profile-raising, incentivisation and career development</p>	II.4 Industry Structure and Leadership
<p>Suggested Actions</p> <ol style="list-style-type: none"> 1. Collaborate with other key industry stakeholders to develop and implement a programme of positive profile raising with recruitment agencies and the media. 2. Consider the feasibility of forms of incentivisation that could be adopted to retain newly qualified cadets. 		

Recommendation		Ref Analysis
R8	Promote and encourage the industry to drive towards reduction of bureaucracy and paperwork, and simplification of procedures . This should be linked to a complementary drive to promote a “zero-tolerance” approach to violations of procedures . In the safety context, this recommendation would be aimed at addressing problems in some parts of the industry with corner-cutting and the “cover your backside” mentality, exacerbated by cost and time pressures.	II.3 Resources and Costs II.6 Standards and Implementation
Suggested Actions <ol style="list-style-type: none"> 1. MCA could perhaps best initiate this through setting an example – implementing a programme to cut down bureaucracy and red-tape in its own internal processes, procedures and organisation. 2. Involve Masters, Officers and crews in team-based reviews of current rules and procedures, aimed at improving practicality and simplifying and removing unnecessary items. Consider setting a quantitative target for reduction in numbers of procedures. 3. Recommend to the industry an email reduction programme. There are examples of such programmes that have been adopted in other industries. 4. Include the principles of zero-tolerance – supported by a “just” progressive discipline framework – into training modules for leaders (ref R1 above). 		

Recommendation		Ref Analysis
R9	MCA should consider means to improve enforcement of working hours regulations by ship operators, this being a primary safety risk area and an issue which may place significant pressure on Masters to compromise. Whilst it is easy to recommend that checks and inspections should be increased, this is clearly difficult to achieve in practice. It is beyond the scope of this study to investigate fully all the options for implementation.	II.3 Resources and Costs
Suggested Actions <ol style="list-style-type: none"> 1. MCA should identify, characterise and cost options for improving enforcement. We are not able to say from the research whether improvement is easily achievable in practice. 		

Recommendation		Ref Analysis
R10	The Leadership Pack on safety leadership should be kept concise to avoid being regarded as yet more paperwork.	II.5 Competence Management
Suggested Actions <ol style="list-style-type: none"> 1. Subject to satisfactory approval and completion of the Leadership Pack, MCA should implement an industry roll-out programme. The programme should emphasise the thrust of the foregoing recommendations including: <ul style="list-style-type: none"> • Recognition of the significance of current structural barriers and prevailing circumstances which have an impact on safety leadership • The need to simplify bureaucracy and red-tape • The need for Masters to strengthen the “people” side of their roles as leaders. 		

I. Introduction

1. Background

The Maritime and Coastguard Agency (MCA) is committed to preventing loss of life, continuously improving maritime safety, and protecting the marine environment. In their 2003-04 business plan, MCA recognised the need to identify and assess ‘best practice’ in the implementation of the International Safety Management (ISM) Code. The ISM Code is an international standard for safe management and operation of ships and addresses the responsibilities of the people who manage and operate ships.

As part of its Human Element Strategy, MCA have identified that assessment of best practice in implementation of the ISM Code is a key activity. In particular, there is an increasing conviction that the safety of operations at sea is highly dependent on the leadership capacity of the senior officers, both at sea, on-shore and at the shore-ship interface. This aligns closely with well-established thinking in other hazardous industries – the behaviour of people in an organisation is strongly influenced by how the leaders behave, often inferred indirectly through perceptions of the leaders’ everyday behaviour rather than directly through formal mission statements or speeches. Whilst there is already a substantial body of research addressing safety culture and safety leadership in a range of hazardous industries, there is comparatively little which relates this specifically to the UK maritime sector and its particular issues and challenges.

As one of its improvement initiatives, MCA therefore commissioned Arthur D Little, supported by the Institute of Maritime Law at Southampton University, to carry out this research to understand better the barriers and enablers for effective safety leadership in the industry, and based on this to develop guidance that leaders could use to help them improve their performance.

2. Objectives and Scope

The objectives of this research project comprise:

- Developing a set of core leadership qualities that have a positive influence on safety culture in the shipping industry, if appropriate, including qualities specific to particular posts
- Identifying factors that enable people managing maritime operations to bring about improvements in safety culture
- Identifying constraints that prevent those people from bringing about improvements in safety culture

- Developing an MCA leadership resource pack that contains educational materials and methods

The focus of the study is on front-line leadership skills, although the scope includes a variety of leadership positions with key responsibilities under the ISM Code. The emphasis is on normal rather than emergency operations. The scope of the study covers vessels registered under the Red Ensign. Royal Navy, Royal Fleet Auxiliary, fishing vessels and the leisure industry are excluded from the scope.

3. About this Report

This report is intended primarily for MCA. It provides the findings of the research, and makes recommendations to address current shortfalls in the effectiveness of safety leadership. The report is structured in five main chapters:

- I. **Introduction:** (this part) background to the study, objectives, scope and brief overview of the methodology
- II. **Factors Influencing Safety Leadership Effectiveness:** an analysis of the main findings of the research including identification of the main barriers to effective leadership as well as key strengths
- III. **Core Safety Leadership Qualities:** a discussion of the desirable qualities in leaders, and an analysis of key areas for development based on the findings in Chapter II
- IV. **Conclusions**
- V. **Recommendations**

Appendices: detailed information regarding study approach, methodologies, survey results

This report is one of two main deliverables of the research. A ‘Leadership Resource Pack’ containing educational materials will be provided to leaders as a tool for sharing good practice based on the findings of the research. In addition, the key results of the study will be ‘rolled-out’ to industry in a series of presentations.

4. Overview of Approach

In overview, the study was conducted as a series of five main tasks as illustrated in [Figure 1](#) below.

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Figure 1: Approach



Source: Arthur D Little

An important first step was preparation of an issues analysis (provided in Appendix B), which provides a hierarchical breakdown of the issues to be explored in the interview programme. In overview, the issues analysis considered that the overall question for the research was: “Do leaders in the maritime industry provide effective safety leadership?” Beneath this, the key areas to explore were identified as:

- Is the **industry structure** supportive of effective safety leadership?
- Do the **operational processes and practices** support effective safety leadership?
- Do leaders have the **required qualities** for effective safety leadership?

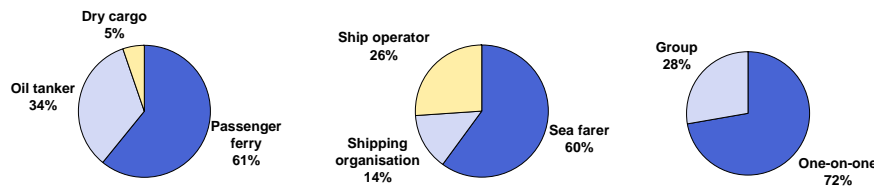
Based on the issues analysis an interview protocol was prepared to ensure that all key areas were covered in the interviews. The bulk of the work involved a series of both one-on-one and group discussions with active seafarers and other managers involved in shipping – in total 65 people were consulted. An initial programme of interviews was conducted and the early findings discussed with MCA to verify the approach, before completing the full programme of interviews and focus groups with industry representatives. The primary focus of the interviews was the Master, but the programme extended to representatives of other organisations, and to seafaring officers and other crew. [Figure 2](#) provides a summary of the interviews and group discussions conducted with a more detailed list provided in Appendix D.

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Figure 2: Summary of Interviews and Group Discussions (65 people interviewed)



At the outset of this study, it was recognised that although a standard series of interviews may help to identify the more systematic enablers and barriers to effective safety leadership (such as costs, resources and industry structure), diagnosis of other potentially ‘hidden’ issues affecting leadership may require a different approach. Numerous studies in other industries have recognised the importance of cultural issues – that is the values, attitudes and perceptions of individuals and organisations.

We refer to the apparently hidden issues as the “Unwritten Rules of the Game” which are best thought of as “*the advice you would give a friend on how to get on in the organisation*”, or else “*what really goes on around here*”. They are invariably different to the Written Rules – for example, a Written Rule might be “report all safety incidents” whilst the Unwritten Rule is “only report significant incidents, otherwise you will be drowned in paperwork”.

Unwritten Rules for individuals at senior and middle management levels can be identified by considering *what* they consider to be important, *who* can provide it, and *how* they can get it. Often the “Unwritten Rules” may have undesired side effects that can stem from a well-intended written rule. An example of a written rule is providing a financial bonus for good safety performance. This well-intended written rule may discourage reporting – the Unwritten Rule being “cover up injuries and near misses” – with the adverse side-effect of poor knowledge of accidents and a failure to learn from mistakes.

The approach taken in the interviews followed the principles described above to identify not only the explicit barriers to effective safety leadership, but also the implicit barriers – Unwritten Rules – to effective safety leadership.

Figure 3 provides a simple example of how the results of the interviews were analysed to understand the ‘cause and effect’ between the explicit barriers, values, attitudes and perceptions, leading to the implicit barriers and ultimately to undesirable side effects. In the example, the fact that inspections follow a prescribed checklist leads to the perception that the audit is of limited value, a ‘tick the box attitude to safety management’, and the unwritten rule is to prepare for the audit in advance to give a strong impression. In this case the obvious side effect is that less value is gained from the audit process.

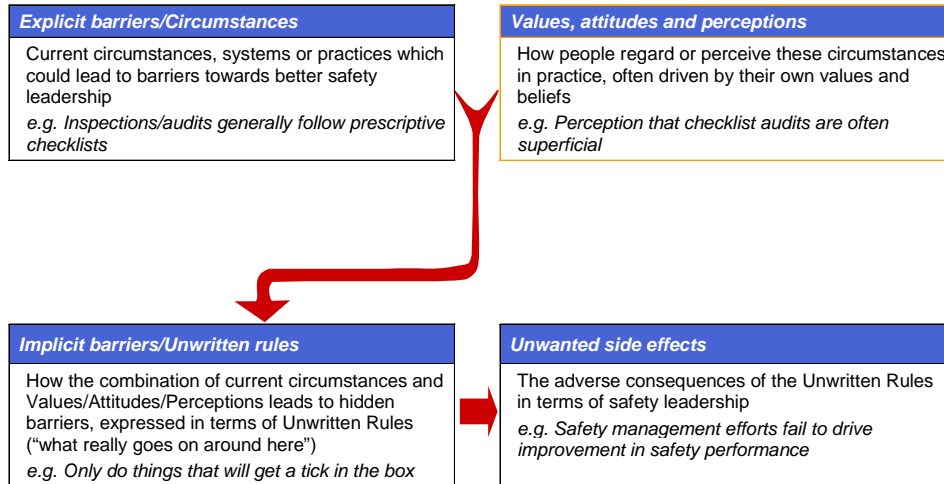
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In Chapter II, the findings of the study are presented in the format illustrated here, together with suggestions for the enablers for overcoming the barriers and preventing the undesired side effects.

Figure 3: Example Analysis



Source: Arthur D Little

It should be noted that the scope of work did not include a review of safety management systems or standards.

II. Factors Influencing Safety Leadership Effectiveness

In this chapter, we present the main findings of the research with regard to the factors that influence effective safety leadership positively or negatively in the industry. They have been grouped into six main areas, with a seventh section comparing issues with those in other industries:

1. Overview of strengths
2. Ship-shore interface
3. Resources and costs
4. Industry leadership
5. Competence management
6. Standards and implementation
7. Comparison with other industries

In the first section, we provide a summary of the areas in which significant strengths were identified. This section provides important context for the subsequent five sections in which the barriers to effective leadership are explored in detail. In each of the five areas, we present the ‘explicit barriers’ to effective leadership, and illustrate how these link to the ‘implicit barriers’ or unwritten rules, and ultimately to undesirable safety side effects, using the analysis pattern as illustrated in [Figure 2](#). We also present the ‘enablers’ which, if implemented, could help to overcome the barriers and thus enable effective safety leadership. Many of these stem from examples of good practice that were identified through the course of the interviews and group discussions carried out for this research.

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Support for the above is provided in the form of anonymous quotes recorded in the interviews and group discussions.

In section 7 we provide a perspective on how some of the key factors influencing leadership in the maritime industry compare to the rail and aviation industries.

It is important to note that there are significant variations across the different companies and industry organisations regarding their management of safety, commitment to safety leadership and culture, and that the views of individuals may not represent the policies of the companies that they represent. Indeed, the purpose in seeking to understand the cultural issues is to identify the values, attitudes and perceptions that may lead to unwritten rules – as opposed to what is written down – that may lead to undesirable side-effects.

It is important for the reader to realise that the “Values/Attitudes/Perceptions” statements therefore do not necessarily represent our view of the objective reality – rather, they represent the actual perceptions of those within the industry, irrespective of whether they are in fact “right or wrong”.

Where there are significant differences in the views expressed between different individuals, these are noted. The findings are colour-coded to illustrate the overall level of agreement:

- **Red** – widespread agreement. Most or all of those interviewed shared the view.
- **Blue** – moderate agreement. Some of those interviewed shared the view.
- **Black** – limited agreement. The opinion was expressed by a limited number of individuals only.

1. Overview of Strengths

Several key existing strengths in effective safety leadership were identified throughout the programme of interviews. Where in place, these practices are perceived by those interviewed to be contributing towards effective safety leadership, either at the level of the individual (primarily the Master) or the organisation. These strengths form a platform on which to build further improvement.

The strengths identified have been grouped into seven main areas:

- Commitment to safety is high
- Positive influence of ISM Code
- Some companies are providing effective safety leadership
- The Master is widely regarded as ‘the’ leader
- **MAIB** is perceived by those interviewed for this study to be playing a positive leadership role, although of course its remit covers only one specific aspect of leadership
- Communication methods can be supportive of good leadership
- Some examples of good training

Commitment to safety is high

There was widespread agreement among those consulted that safety is regarded as top priority, and in most cases this is acted upon with commitment to resources for safety being made available:

“I see safety here as being always a great priority in all procedures.” (Shipping organisation)

“Yes, safety comes first in the industry. You know this because they think about doing something safely rather than economically.” (Shipping organisation)

“It has become a given in the company ...we have never had a request for safety modification thrown back because of cost” (Passenger ferry)

The emphasis on safety (or more broadly on loss prevention) was perhaps particularly evident in oil carriers because *“the oil companies choose which company can tender, and they place heavy emphasis on safety.”*

Positive influence of ISM Code

Overall, there was widespread agreement that the ISM Code has had a very positive impact on safety management, and itself is a key tool in leading safety across the industry. The Code was identified by many of those consulted as a good example of regulation:

- Flexible:
 - *“The ISM Code is fantastic regulation - it is sufficiently prescriptive to give guidance but also sufficiently loose to allow companies to operate within their style.”* (Shipping organisation)
- Distribution of responsibilities:
 - *“ISM has helped. Now, ISM means that responsibilities are properly distributed. The company has to play its part.”* (Dry cargo)
- Formalisation of procedures:
 - *“The ISM Code has meant that safety management systems have become more formalised and written down.”* (Shipping organisation)
- Increasing discipline and awareness:
 - *“A good example is ISM: it has heightened awareness in shipping”.* (Shipping organisation)
 - *“ISM is generally good, and has instilled good discipline.”* (Passenger ferry)

Effective safety leadership is being provided by some companies regardless of size

There was widespread opinion that there is a considerable variation in commitment to safety across different shipping operators. Most people consulted expressed that there are indeed some excellent performers, although they are a minority:

“Commitment varies widely. In some it is very strong, but they are in the minority.”
(Shipping organisation)

The Nautical Institute’s guide ‘Cracking the Code’ (Appendix A, Ref: 022) examines the relevance of the ISM Code and its impact on shipping. Responses to the book confirmed that a minority are good safety leaders:

“90% of responses to the book showed that people were having problems managing safety. But the 10% were making the safety managers work.” (Shipping organisation).

There is, however, some variation in opinion as to who the ‘good performers’ are. Some perceived that performance and leadership are stronger among the larger ‘blue chip’ companies who have more developed safety management systems, and can draw on wider resources (people and financial) to invest in safety. Perhaps more encouraging is that others perceived that **good leadership is more a function of commitment from the top**, and is not so much related to the size of the company.

The fact that there are some clear leaders in safety is encouraging, but the extent of apparent variation in commitment to safety is less positive as it suggests problems regarding implementation and enforcement of standards (see Chapter II, Section 6 ‘Standards and Implementation’).

The Master is widely regarded as ‘the’ leader

The majority of those consulted hold the Master in high regard. Overall, the following qualities appeared to be present in the leaders of those consulted:

- Respect: many felt they could easily approach their Master and valued their commitment to safety.
 - *“I feel the Captain is very safety conscious. I have sailed with him for a long time and he has a good strictness level.”* (Passenger ferry)
 - *“(He) is a good captain and he is down to earth - you can go to him.”*
(Passenger ferry)
- Experience and technical skills: there was widespread agreement that the Master was experienced enough to safely run the ship.
 - *“In general the people are sufficiently experienced.”* (Tanker)
 - *“They have enough knowledge. If you have a maritime background then it is instilled into you.”* (Shipping organisation)
- Authority: according to popular opinion, the Master is suitably empowered to act according to his authority (critically important for effective leadership):
 - *“Yes, they have full authority and are given full encouragement and the means.”* (Tanker)

MAIB is generally perceived to be playing a positive leadership role within the scope of its operations

The Marine Accident Investigation Branch (MAIB) examines and investigates all types of marine accidents for UK ships worldwide, and other ships in UK territorial waters. Its annual reports describe what the branch has done during the year, with investigation findings and recommendations.

Amongst those consulted for this study, there was widespread acknowledgement that “MAIB’s reports are excellent”. They were described as “*insightful*” (Tanker), and “*you can learn a lot from them*” (Passenger ferry).

Whilst these perceptions are very positive, it must be understood that the MAIB’s capacity to provide leadership is inherently limited by the scope of their operations – to investigate accidents.

Communication methods can be supportive of good leadership

Many of those consulted acknowledged that communications have improved greatly, with many forms of communication open to them – e.g. email, satellite phones. There was also fairly widespread agreement that communication is honest:

“We do not need any improvements to our communication, it is open and honest and works effectively.” (Shipping organisation)

The reasoning behind the increased effectiveness in communication seems to be the involvement of seafarers in decisions, the more open management style and fewer people onboard:

“Communication has probably improved from sharp end upwards compared to years ago due to the more modern management style and the shortage of people, which actually means that the captain is more involved in day- to-day goings on. Communications have also improved as seafarers are more involved than before in management discussions.” (Shipping organisation)

Some examples of good training

There was some limited opinion that commitment to training is increasing, with the majority of those consulted favouring hands-on practical training, over several days:

“There is definitely more training than there used to be. Most is on-board or ashore and is very effective. I found the man-handling training course to be especially

effective, it was a full day course with practical hands on, and we got First Aid.”
(Passenger ferry)

“The company are good on training. They provide training regularly for new equipment e.g. how to use new lifeboats etc.” (Tanker)

“I think the safety drills (once a week) are very effective and I learn a lot from them.”
(Passenger ferry)

In some cases training records were kept, and the crew were reminded when they next needed to attend a course:

“The Master has training records, you get reminded when you need to go on a course... I cannot think of any training improvements.” (Dry cargo)

It was acknowledged that *“training is good as far as technical issues are concerned”* Shipping companies who had committed resources to management training courses (only tanker crew in the case of those consulted for this study) felt they had been very beneficial:

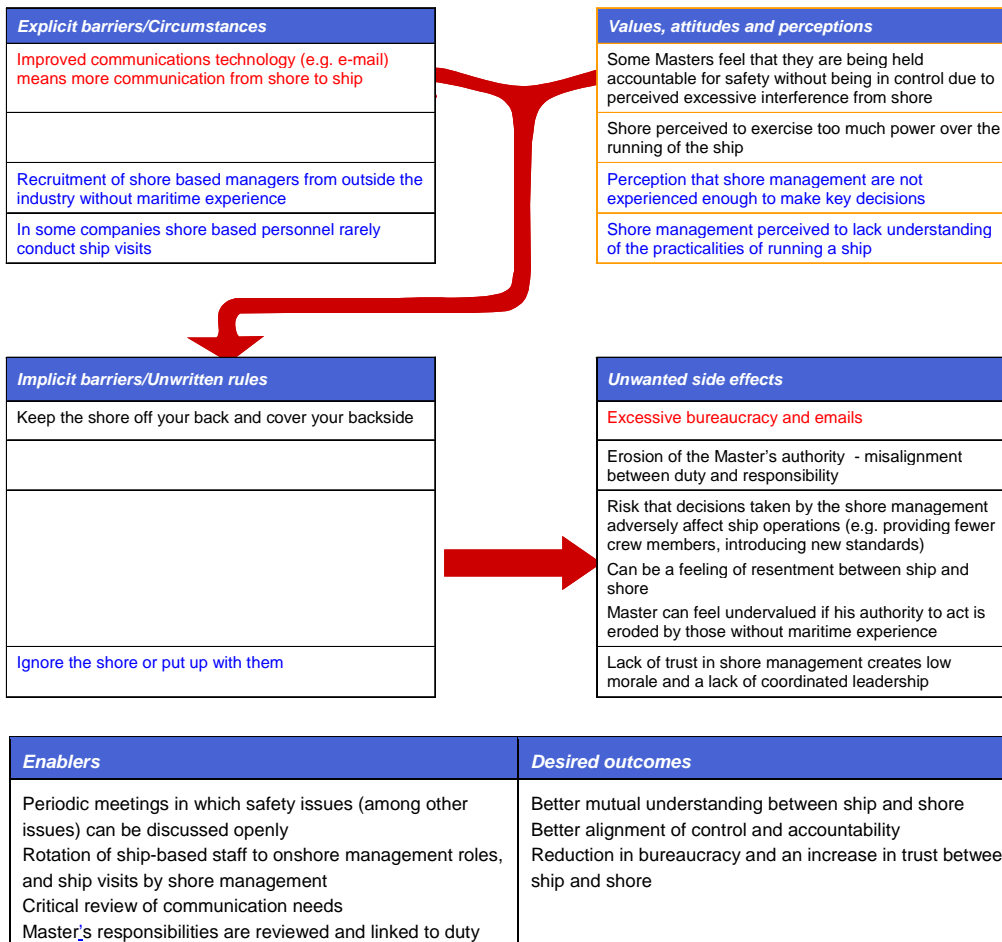
“With (company name omitted) I did management training which was incredibly useful and I really enjoyed their attitude towards people, they made us feel an important part of the company ... they did this by giving you a budget to create in little management groups something that would improve life aboard.” (Tanker)

“I am lucky in (company name omitted) because we have done lots of management courses, that are five days with tests and team-building.” (Tanker)

However, training in people management or leadership is widely recognised as being deficient, as discussed in Chapter II, Section 4 ‘Industry Leadership’.

2. Ship–Shore Interface

The effectiveness of management between the ship and shore differs significantly between companies. When managed well, there is open dialogue between ship and shore, and usually some rotation of ship and shore personnel to gain mutual trust and respect. In such cases shore management provides a valuable and consistent level of oversight of company operations at sea. However, in some cases there is a perception that there is excessive interference from shore staff who lack practical experience, which undermines the authority of the Master as leader, and creates a feeling of resentment and low morale. A perceived increase in new standards and regulations (largely in-company rather than external) is also seen as, in some ways, undermining the Master’s position.



Quotes

Explicit barriers/Circumstances
"The sole purpose of the ship is to provide the paperwork to keep the shore employed." (Passenger ferry)
"The industry is getting worse because there are lots of senior people ashore that don't know about ships. You are always doing something under the direction of someone else". (Shipping organisation)
"Shore management very seldom come on board." (Passenger ferry)

Values, attitudes and perceptions
"Traditionally only the Master was accountable, now we have corporate governance and the blame can go much higher than the Master - therefore there is the culture of covering your backside". (Passenger ferry)
"Most [companies] have too much power onshore, not enough offshore - people ashore holding onto power". (Shipping organisation)
"New projects are planned by management ashore without consulting us and this can be frustrating especially where, if we had been asked, we might have found better solutions." (Passenger ferry)
"Many onshore don't know enough about ships. " (Shipping organisation)

Implicit barriers/Unwritten rules
"The main pressure on the Captain is keeping management off his back. Shore makes unreasonable requests". (Passenger ferry)
"It is usually us and them - I don't feel they understand us. In [company name removed] lots of officers were involved onshore- this helps open us communication". (Liquid bulk cargo)
"Within days of being onshore, ship people are seen to become 'one of them'. The longer the period, the worse it gets". (Dry cargo)

Unwanted side effects
"The company manual is huge - how am I supposed to know that? It is backside covering". (Passenger ferry)
"The ship to shore divide is very evident and the ship has to do what it is told. " (Passenger ferry)
"The shore management is bad, they tend to make silly decisions without looking at the impact." (Passenger ferry)
"I would like to go ashore and ask them "do you know what ships are sailing today?" I find that communication and appreciation are lacking." (Passenger ferry)

Enablers
"I think that offering ship staff the chance to work ashore from time would be an excellent way of sharing our problems and gaining an understanding of what we all have to do." (Passenger ferry)
"It is clarity of accountability – the captain is accountable but likes advice. We have experienced ex-captains as advisors." (Tanker)
"Superintendents work here on rotation from the fleet. We stay here for six months and then we go back to sea. Rotation is the key to this." (Dry cargo)

Discussion

Increased communication and increase in shore-based management: there is widespread agreement among those consulted for this study that the availability of improved communication methods (in particular email and also mobile and satellite telephones) has meant that it is now “*easier to contact the shore*” (Tanker). The opening of communication brings some clear advantages in the ability for real-time management between the ship and shore, as illustrated by the following quote and discussed in Section 1 of this chapter:

“People value other people’s judgements. You need trust, which has to be there before the accident – it needs to be there in the first place. Some people can’t cope in an emergency – they do need shore advice.” (Tanker)

The last part of this quote relates to a key requirement of the ISM Code which requires a designated person (or persons) ashore with access to the highest levels of management (see part 6 of this Chapter for discussion on the implementation of the ISM Code).

Despite the advantages, many perceive that more regular communication brings problems.

Firstly the opening up of communications across the ship–shore interface (together with more management emphasis of keeping paper records) is widely agreed to have increased paperwork which is perceived to be hampering the dynamic running of the ship. Increases in questions and demands from the shore can affect the morale of those on the ship:

“There is a lot of email traffic ... some of it is very repetitive and sometimes people perceive they should just be able to get on with their job rather than hearing stuff coming from shore all the time.” (Tanker)

“Morale can be affected – you are under the scanner all the time with too many questions to answer.” (Tanker)

Those companies who feel the shore has become too demanding may adopt the unwritten rule *“keep the shore off your back and cover your backside”*. Clearly, such a belief is likely to be a barrier to effective shore-based leadership or management.

It is common across any industry for there to be a period during the evolution of management systems in which paperwork increases as more formal arrangements are developed, rolled out and implemented. Often, a company will move from having very few formal arrangements with little in the way of written records, towards a culture of perhaps excessive paperwork, before systems are more embedded and the record-keeping becomes less burdensome. Of course, more generally with modern communication tools, the *amount* of communication in business is a common source of complaint. Paperwork is discussed in greater detail in Section 3 “Resources and Costs”.

A critical review of communication needs could be carried out to identify unnecessary paperwork and communications, and help to re-engage offshore management with the ship.

The second issue arising from increased communication is the perception that shore management is trying to exercise too much control over the running of the ship. In such cases, the Master can feel that his authority to act and make decisions according to his position is undermined by levels of management on the shore. The requirement of the ISM Code for a Designated Person Ashore will have no doubt provided some shift in management towards the shore. Some interviewed suggested that a move towards increased corporate governance is behind the more hands on management that has been adopted – effectively control has been brought up towards central senior management, eroding the role of the Master. An example is the introduction of new standards or company safety manuals which may be prepared without consultation with Masters, who are simply told to sign up to the contents of the manual which is perceived to be unworkably complex and detailed. The manual in this case is seen as in place simply to protect the company from liability should there be an error, rather than serving to help manage safety practically on board.

Masters are increasingly likely to contact the shore before reaching decisions, and are often ‘told what to do’. Increasingly the Master is seen as one in a chain of management yet his responsibility for safety has not in any way been reduced by the greater ease of communication (Appendix A, Ref: 017).

Lack of at-sea experience among shore-based management: traditionally after a career at sea skilled mariners progressed to shore careers, but there is now widespread concern that managers ashore do not have at-sea experience, and thus lack the knowledge to make key safety decisions which will affect the ship (Appendix A, Ref: 005):

“The industry is getting worse because there are lots of senior people ashore that don’t know about ships. You are always doing something under the direction of someone else. People ashore have a lack of understanding and often haven’t been through the ranks. (Company name omitted) are having problems – they have inexperienced senior people that can’t make decisions.” (Shipping organisation)

Such a lack of trust can lead to a feeling of resentment and mistrust between the ship and shore, which will provide potentially serious barrier to effective leadership, which requires a degree of trust and respect. Several ship companies are already employing measures to overcome this through the rotation of staff between the ship and shore:

“We should have senior people being integrated into senior shore management where they are trusted and respected. It is realistic to bring masters ashore - some companies do.” (Shipping organisation). It is worth noting that successful rotation of senior management between the ship and shore, would provide even greater benefits associated with instilling effective leadership qualities in seafarers.

One dry cargo ship operator in particular implemented ship-shore staff rotations for six months at a time. Although some operators interviewed appeared to lack a similar programme, they did involve ship and shore managers in regular safety meetings as a way of working together, and also acknowledged that giving staff the chance to work ashore would be a good way of developing understanding between the two.

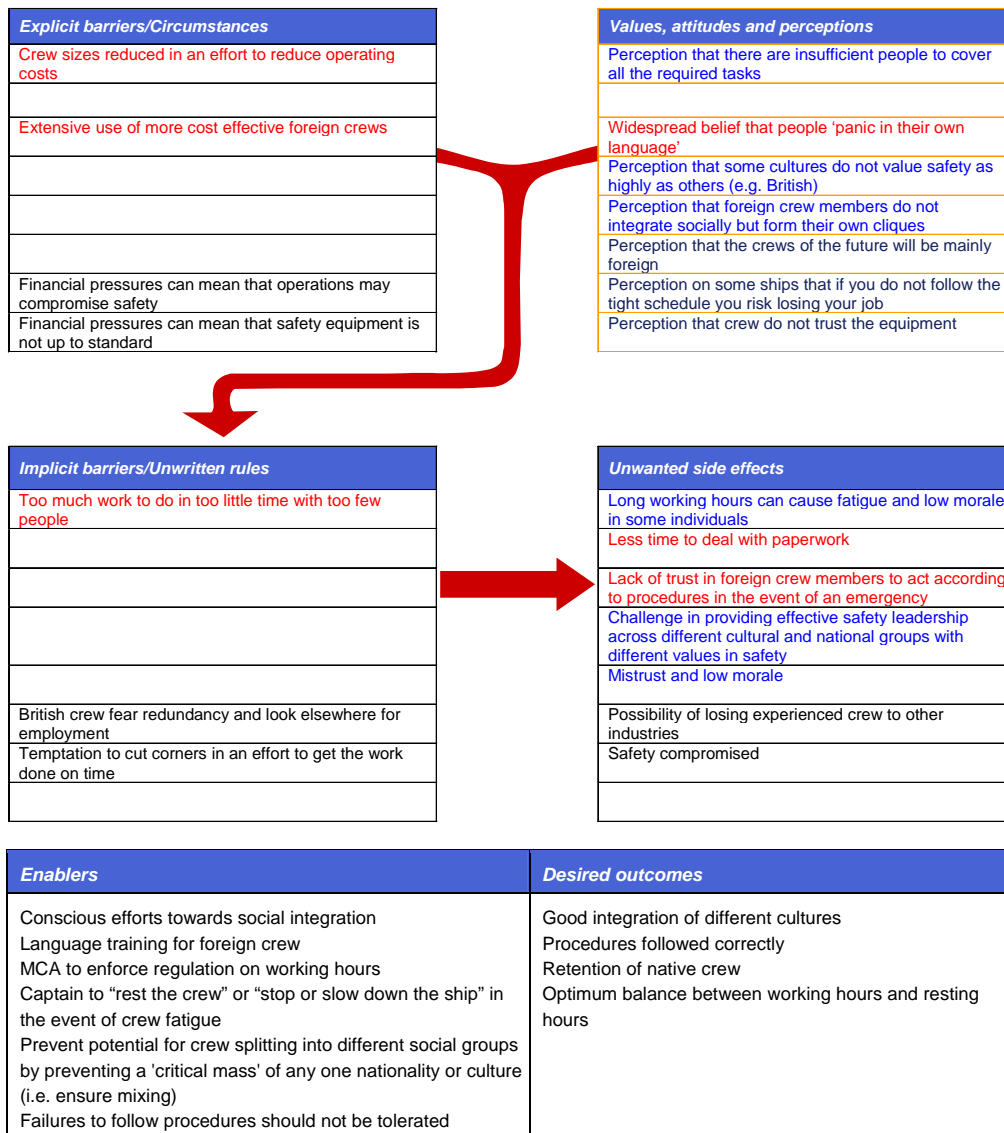
Ship visits: the absence of shore personnel visits to ships is acknowledged in the case of passenger ferries, less so for bulk cargo ships. A lack of such presence translates to some crew as a lack of interest and understanding in the ships, and the ship and shore become ‘divorced’:

“The attitude between those on the ship and those onshore needs to change as they are working as separate teams.” (Shipping organisation)

In this case, it is “vital to appoint a go-between to act as a link between ship and shore” (Appendix A, Ref: 015). In this respect, the Designated Person Ashore as required under ISM has an important role to play. Regular ships’ visits as well as the staff rotation programme mentioned previously will help to re-establish the link. Additionally the management philosophies and procedures of the ship and shore staff should be bound together as a cohesive unit (Appendix A, Ref: 018).

3. Resources and Costs

Financial pressures are widely perceived to be driving reductions in crew sizes to a bare minimum, which, combined with greater requirements for reporting and paperwork, means that long working hours and fatigue are common complaints. Extensive use of lower cost multinational crews also creates additional leadership challenges.



Quotes

Explicit barriers/Circumstances
"Companies reduce staff because there can be a serious loss of life if there is a disaster, and also the middle managers seek to squeeze costs - they go too far." (Shipping organisation)
"The use of foreign crews is driven by cost. They save £3000 per year per person apparently." (Passenger ferry)
"Operations can predominate over safety among cargo and smaller companies who are bottom line focused". (Shipping organisation)
"I think that some of the equipment we use on ships is archaic and should be more up to date." (Passenger ferry)

Values, attitudes and perceptions
"The Portuguese crew... are decent people but they are being totally exploited in terms of pay and hours." (Passenger ferry)
"(Language) is an issue - mainly because when there is an emergency people panic in their own language!" (Shipping organisation)
"Culturally different people will be more or less good at safety" (Liquid bulk cargo)
"There are barriers to socialising" (Liquid bulk cargo)
"The future of recruitment is geared towards cheap labour – e.g. eastern European catering companies. It could be a problem". (Liquid bulk cargo)
"Captains do not receive financial bonuses, but can lose their job if the ship is significantly delayed - this can lead them to compromise safety." (Shipping organisation)
"The davits have to be wound down. Having a hook is very hazardous. I would not like to use it. There will be 25 people in there in an emergency and you let them down on a brake. I mentioned the hook hazard and the Chief Officers know about it already, but it would cost a fortune to replace." (Passenger ferry)

Implicit barriers/Unwritten rules
"The main barrier to effective safety leadership is probably commercial pressure, in the sense that you have 'got to get it done'. Staff work too many hours and work late because they are under pressure". (Shipping organisation)
"Some culture mixes are not conducive to natural safety management. For example, a young coloured employee is unlikely to raise an issue with a white older officer" (Shipping organisation)
"The UK are priced out of the market - it will all be Eastern Europeans in the future". (Passenger ferry) "There are worries among the ratings that they will get replaced with foreign crews who are cheaper." (Passenger ferry)
"I am meant to work 12 hours, but often it can be 14 or 15 hours. I am always tired. You have to cut corners, which can be an issue for safety. There are lots of cutting corners throughout the crew." (Passenger ferry)

Unwanted side effects
"People numbers have been stripped back to bare essentials. It can cause fatigue". (Shipping organisation) "Motivation has been seriously affected by cuts in employment and manning, leading to demotivation." (Passenger ferry)
"The problem is that you have loads [of paperwork] to do before actually doing the job. So you do less actual work". (Passenger ferry)
"There is a language problem... in an emergency I think something nasty could happen". (Passenger ferry)
"There are differences in the way different cultures do business - some are discreet and some are open - and it can be a bit of a battle." (Shipping organisation) "People learn in different ways - some lead by example, whereas others lead by control." (Shipping organisation)
"I am a foreigner so I understand the issues the Portuguese have but they do create little pockets / groups which does make morale worse." (Passenger ferry)
"My manager and I are both looking for other jobs. Morale is very low. I think I will be pushed out by cheaper Portuguese people - (company's name omitted) get them because they are cheaper." (Passenger ferry)
"Nowadays on short runs life is very busy with pressure at all times and there is a risk that there may be less attention paid to safety." (Passenger ferry)

Enablers
"(Cultural differences) can be overcome by making people understand what the outcome should be, not the input." (Shipping organisation)
"Mixed crews work well, provided each nationality is represented in small groups and that there is no one preponderant group." (Tanker)
"If foreign crews are contracted for longer they are more focussed on safety." (Tanker)
"We teach basic English to all our recruits. They have regular tests for their first year. All our entertainment and training materials is in English (films, videos and books etc.)" (Dry cargo)
"MCA should make more checks of breaches to the minimum hours of rest". (Passenger ferry)
"We are unique in that we see fatigue as a problem. In our masters instructions we say if a watching officer is too tired to navigate, the ship stops – they ring the office and we stop the ship (this has happened tens of times). Our customers have never had a problem with this, but in theory we are breaching our contract." (Tanker)

Discussion

In this section, we cover a number of issues relating to resources and costs, and in particular how financial constraints are perceived to be having implications for the running of the ship. Five main areas are discussed:

- (a) Reduced crew size
- (b) Paperwork
- (c) Multinational crews
- (d) Cutting corners
- (e) Safety equipment

It is important to bear in mind that complaints regarding company resources are common in studies such as this, in which interviewees are encouraged to discuss their opinions openly. As such, the quotes used below must be regarded as opinions of those consulted. Note also that some specific references (e.g. to nationalities) have been removed from the quotes.

*(a) **Reduced Crew Size:** there was widespread concern among those involved in this study about reductions in crew numbers driven by financial pressures. This concern was shared across all types of ship included in this study (bulk cargo, oil products, passenger).*

“Ships are under so much pressure to reduce manning. The Master sits with the problem of how to deliver it.” (Shipping organisation)

Of particular concern is the perception that as a result of reduced crew numbers, the remaining staff are having to work long hours to make up for the reduction in numbers. Among the sample taken for this research, the crew of passenger ferries seemed particularly susceptible to long working hours as a result of reduced crew and short turnarounds inherent in their operations. Combined with increased demands in reporting and paperwork many believe that there is less time to do actual work. There is the potential for an adverse effect on safety should fatigue and stress become excessive (Appendix A, Ref: 016). Excessive working hours causing crew fatigue is considered one of the key causal factors of human error by the UK P&I Club (Appendix A, Ref: 002). Fatigue at work can lead to poorer performance on tasks that require attention, such as decision-making, but can be seen as the norm, and working long hours are accepted as part of the culture (Appendix A, Ref: 020).

“Working hours are long and fatigue can be an issue, due to shortage of crew and commercial pressures. You just need to make sure the paperwork is right.” (Shipping organisation)

In July 2003 the International Labour Organisation's Protocol to ILO147 came into force, which covers the checking of new requirements for seafarers hours' of work and rest. However, many of the hotel and catering staff on passenger vessels allege that they do not always enjoy the minimum rest periods to which they are entitled. On one passenger ferry in particular the hotel and catering crew (sourced primarily from another country) were working for eight weeks, seven days a week, with apparently less than six hours' rest every 24 hours:

"People work very long hours - they have a 91 hour working week as a maximum!"

"One guy's cabin I visited has three alarm clocks!" (Passenger ferry)

Whether this is forced upon them or whether they are otherwise unable to complete their duties, it seems clear that ship operators need to supervise more closely, and better record, the hours worked by such staff.

Not only are some staff working long hours, but also their tours of duty are prolonged and concentrated. In some cases, manning agencies may, on completion of one tour, immediately require them to join another ship and start over again.

"There is no quality of time off at all. I have seen people towards the end of a two-week period stint that lose concentration. Eight weeks for [the crew] is not right - two weeks is enough for anyone. I have seen a few agencies that would break the rules, unknown to us, where they would send the labour from one ship to another when they had already been working long hours." (Passenger ferry)

"British workers should not work on board for longer than 14 days but the ...(foreign) ... crew members work for up to eight weeks." (Passenger ferry)

"According to IMO, STCW95 (Standard for training and certification of watch-keepers) watch-keepers must get 70 hours' rest in any seven day period, 10 hours' rest in any 24 hour period and six out of those 10 hours must be continuous. There is, however, no guideline for the number of weeks at sea." (Shipping organisation)

There was widespread opinion from those consulted that the MCA should take steps to enforce the regulation on working hours by making more checks to the breaches of these hours. While this proposal may have some merit, it must be recognised that it would impose extra burdens upon the MCA, not only in terms of manpower resources but also where ships are operating overseas. Effective supervision and recording of working hours is, in any case, the responsibility of the ship operator.

Better enforcement of working hours would be desirable, if this could be achieved. However, currently there are barriers to the MCA providing this role; they have insufficient time and resources for this, and they have no power to insist that records are produced on demand.

“The MCA does no proactive enforcement of hours, and has no force to elicit working reports from ships.” (Shipping organisation)

Oil products shipping companies address the problem of fatigue by halting operations if necessary to enable the crew to rest properly. Clearly, extending such a solution to passenger ferries would be difficult due to the nature of the ship operations.

(b) Paperwork: one area of common complaint among those interviewed for this study was excessive paperwork and other administrative duties. Combined with reduced crew sizes many people complained that the time available to do their actual work was significantly restricted. The Nautical Institute’s journal ‘Alert’ (Appendix A, Ref: 012) has also raised paperwork as an emerging problem. It states that large volumes of paperwork are being brought about by the requirements of the ISM Code, Port State inspections, vetting inspections and ship-shore safety checks. Email was cited as being a particular problem with some Masters spending four to five hours per day sending and receiving email communications.

(c) Multinational crews: the employment of mixed nationality crews is a long-held tradition in the shipping industry, so in many ways the issues presented in this section are not new. However, the issue of multinational crews was raised very commonly by those consulted for this study. The opening up of the international market for labour and the expensive employment costs in the UK, have created a recent increase in multinational crews on UK ships, often sourced through labour agencies.

Those interviewed recognised that an increasing number of the crew are sourced from outside the UK, due to their lower employment costs:

“The focus is on the cheapest labour.” (Tanker)

For example, it seems that there are *“real commercial advantages to using [non-UK] crews”* and it was cited that you can *“save \$250 a day if you put an [non-UK] master rather than a UK master (in command).”*

Commercial advantages aside, the interviews revealed three main challenges relating to extensive use of multinational crews:

- i. Language barriers
- ii. Different cultural values
- iii. Uncertainty over future job prospects

These are discussed in detail below.

i. Language barriers: the first concern raised by those interviewed was a perception of language barriers between different nationalities in the crew, despite the working language being English. Language problems in mixed nationality ships are also cited as one of the key causes of human error by the UK P&I Club's report 'Analysis of Major Claims: Ten-Year Trends in Maritime Risk' (Appendix A, Ref: 002). There was widespread concern across those consulted for this study regarding the language barriers on ships, and more specifically the consequences such barriers could lead to in the event of an emergency.

Language barriers can be mitigated by adopting a 'working language'. Nearly half of the ships inspected by the UK P&I Club in its report 'The Human Factor: A Report on Manning' (Appendix A, Ref: 001) adopted English as their working language. However, despite the use of working languages, those consulted for this study were of the opinion that foreign languages were commonly used (e.g. in the mess room) which caused 'pocket' social groups inhibiting wider social interaction and team building:

"Even though company policy is for all communications in English you will find on every single ship people that cannot understand English." (Tanker)

"It is intimidating because they are in large groups and they talk in their own language in the mess room." (Passenger ferry)

"People will revert to their own language - for example if the captain and first mate are [non-UK] then they will talk in their own language but the officers won't understand. This is a safety issue." (Tanker)

A particularly common concern expressed, especially evident on passenger ferries, was the perception that foreign crew would 'panic in their own language' in the event of an emergency:

"The main safety concern is how well the [non-UK] crew would respond in an emergency."

“The [non-UK] tend to panic in their own language.”

The language barriers identified by many ships and shipping organisations were often attributed to declining standards of training and recruitment:

“Initially their training was good when they arrived en-masse, but now they are trickling in to fill up, the company sees training as less important because they will learn from the others that are here.” (Passenger ferry)

Some operators (in the case of those consulted - operators of cargo ships) seem to be tackling the problem of language barriers through more targeted recruitment and better quality language training:

“Language is an issue. English is the international language. When we employ crew they have to be fluent in English. In a crisis you have got to have a common language.”

“Language barriers are disappearing because of training and better recruitment.”
(Tanker)

“Language barriers exist but the company tries to manage this. English is the working language. All new recruits are given a language test. As long as they can communicate basic things, this is enough: training is more important.” (Dry cargo)

It would appear from the opinions of those consulted for this study that such approaches should also be extended more widely to ensure English is rigorously adopted as a working language to overcome perceived language barriers and to create better team work and social interaction.

ii. Different cultural values: opinion was commonly expressed by those interviewed on the different inherent abilities of foreign nationals. Many perceive that different cultures have different attitudes to safety, and actually value safety less highly.

“I worked for a [non-UK] company – they are sharp as needles and incredible business people.” (Shipping organisation)

“We have a [non-UK] master and he is better than the English, which is quite frightening because we pay him less. With the British the parameters are going out, whereas with the [non-UK] they are moving in and getting better.” (Shipping organisation)

“There are definitely issues of quality when different nationalities of officer are concerned. [Some] are good but are weak leaders, [others] are friendly but prefer to talk their own language.” (Tanker)

“When you employ people from developing countries their attitude to safety is not ingrained and you have to drill it into them”. (Shipping organisation)

Individuals on a passenger ferry found it *“difficult to work with crew who do not want to be there ... the [non-UK] did not know what they were getting into when they applied for the job.”* Such low morale amongst the foreign crew was acknowledged as contributing to their lack of commitment to safety onboard:

“They will do OK one day when they are told what to do - but the next day they will be back doing the same things wrong again - they are not committed.”

“Their attitude is “it does not matter and can be done later”. The [non-UK crew] are more relaxed, they take it as a joke. For example, drills.”

In this case not only was there a perception that their commitment to safety was low, but also a lack of trust in their competence to lead and understand the ship:

“The [non-UK crew] are used to being told what to do, they lead by fear. They find it different, not difficult to adjust to. They lack leadership as they are not used to standing up and shouting at people.”

“Having foreign crew makes issues of trust difficult as they are used to a different standard. I want to be able to rest properly when I go for rest and know that things are taken care of well.”

Although it appeared the culture of this foreign crew was ‘used to being told to do’, it was also identified that *“most of the women supervisors find it hard to work with them.”*

Cultural barriers were also perceived to be present on cargo ships:

“Our crew are [non-UK] and have different language, experiences, and attitudes. I find their attitude entirely different to Europeans, they haven’t the good will to learn as much as possible”. (Container ship)

Despite the concern surrounding cultural barriers, many of those consulted believed they could be *“managed by good leadership techniques”* (oil products). For example, one oil products shipping company stated that they overcome cultural barriers through building trust and respect:

“At the time we had different ships – some with [non-UK] and some with Brits – and we got 400 reports from the Brits and 12 or so from the others – their culture was to hide things for fear of penalty. We went out with the [non-UK crew] and wined and dined them and developed the relationship to encourage them to trust us. We built bonds by regularly having a manager on board.” (Tanker)

Attempts to lower cultural barriers are also being employed through guidance. For example:

“STCW’95 is a guide for seafarers done by an international organisation, and has pictures of different races in it all looking happy together - that is an example of a good way of getting the message across'What have the world cup and the ISM Code got in common?' - this aims to break through the cultural barrier, and was written in a simple cartoon form.” (Shipping organisation)

The ship presents an environment isolated from normal society, which creates its own challenges for those aboard, as has been widely investigated in literature. In addition to the isolation from the land, there was widespread concern among those consulted in the study that there is also isolation among different cultural and national groups on board. The perception is that some cultures are “cliquey so they stay in their groups” (Passenger ferry) and this is affecting crew morale.

This presents a clear leadership challenge if the groups are to be brought to work closely as a team with shared values and beliefs.

iii. Uncertainty over future job prospects: concern was expressed about future job prospects by some members of the crew aboard a passenger ferry as they feared replacement by cheaper foreign crews:

“There are worries among the ratings that they will get replaced with foreign crews who are cheaper.”

There was widespread agreement that *“the future of recruitment is geared towards cheap labour – e.g. Eastern European. It could be a problem.”* (Oil products). Such a perception could lead to low morale and a consequent loss of experienced crew to other industries.

Representatives from a cargo ship company explained their ideas for addressing some of the perceived problems mentioned above:

- (1) Ensuring continuity of employment with the aim of achieving a greater commitment to safety:
- *“We have employed foreign crews for the past 30 years or so. Many of them stay with the company for long periods some have been here for 20 years. We have a company pension scheme and they also receive seniority pay. We need to have continuity of employment.”* (Dry cargo)
 - *“The company employs foreign crews but they try to keep them as long as possible so that we have continuity.”* (Dry cargo)
- (2) Prevention of a ‘critical mass’ of one nationality or culture to encourage wider mixing and integration:
- *“All agreed that mixed crews work well, provided each nationality is represented in small groups and that there is no one preponderant group. In many cases owners follow this policy deliberately.”* (Tanker)
 - *“We believe that multi-nationality crews are fine so long as no one group is predominant.”* (Shipping organisation)
 - *“If you have mixed crews it is important to have small groups rather than one or two larger groups which can form into unhealthy clans.”* (Dry cargo)

(d) Cutting Corners: it was widely agreed that safety takes priority over operations, with *“90% fairly committed, 10% definitely.”* (Shipping organisation). Several companies stated that *“safety is number one priority”* (Shipping organisation), and the crew of some ships were of the opinion that their companies were actually *“too concerned about safety - this is OK but is a bit beyond common sense sometimes.”* (Tanker)

However, there were exceptions where it was perceived that *“operations dominate at the expense of safety”* (Shipping organisation). During the short turnaround of a passenger ferry, one individual was concerned that *“there is a risk that there may be less attention paid to safety”*. There was a perception – real or not – that the Master could *“lose their job if the ship is significantly delayed - this can lead them to compromise safety.”* (Shipping organisation)

On rare occasions, such pressures may motivate people to ‘cut corners in order to get the work done’:

“I am always tired. You have to cut corners, which can be an issue for safety. There are lots of cutting corners throughout the crew.” (Passenger ferry)

However such ‘calculated risk taking’ (Appendix A, Ref: 002) was generally perceived as infrequent, and the susceptibility to violate procedures will depend on the individual in question:

“It depends on individuals – if you are competent you should be able to comply and not take short cuts and keep going, still without delays.” (Dry cargo)

On cargo ships, it was agreed that cutting corners is less likely as *“things are becoming more transparent”* (Tanker), and that *“blatant failures to follow procedures should be punished harshly”*.

The HSE ‘Health and Safety Executive Guidance Note 48’ (Appendix A, Ref: 020) recommended the following practices for preventing the occurrence of cutting corners:

- Increase the chances of being detected (e.g. routine monitoring)
- Review the rules to see if any are unnecessary
- Make rules relevant and practical
 - Make the crew understand the reasoning of rules
 - Improve design factors (considering ergonomics) that affect the likelihood of corner cutting
 - Involve the workforce in drawing up rules to increase acceptance

Over and above these HSE guidelines, encouraging safe behaviour and following procedures is perhaps best achieved by the management demonstrating the core value that ‘nothing we do is worth getting hurt for’. This belief is apparently evident in some shipping companies consulted who expressed that if there was a safety concern or the crew were tired, then the ship would (in this case a tanker) proceed to anchor.

The Master of a passenger ferry may decide not to sail because of bad weather – but one Master interviewed said that he would prefer to check with his counterparts on other ships to protect himself from senior management.

(e) Safety equipment: the quality of safety equipment provided on board was raised as an issue of concern by some of the crew of one of the operators consulted for this study:

“I think that some of the equipment we use on ships is archaic and should be more up to date.”

In some rare cases individuals expressed that they would not feel comfortable using the equipment in the event of an emergency:

“The davits have to be wound down. Having a hook is very hazardous, I would not like to use it. There will be 25 people in there in an emergency and you let them down on a break. I mentioned the hook hazard and the Chief Officers know about it already, but it would cost a fortune to replace.”

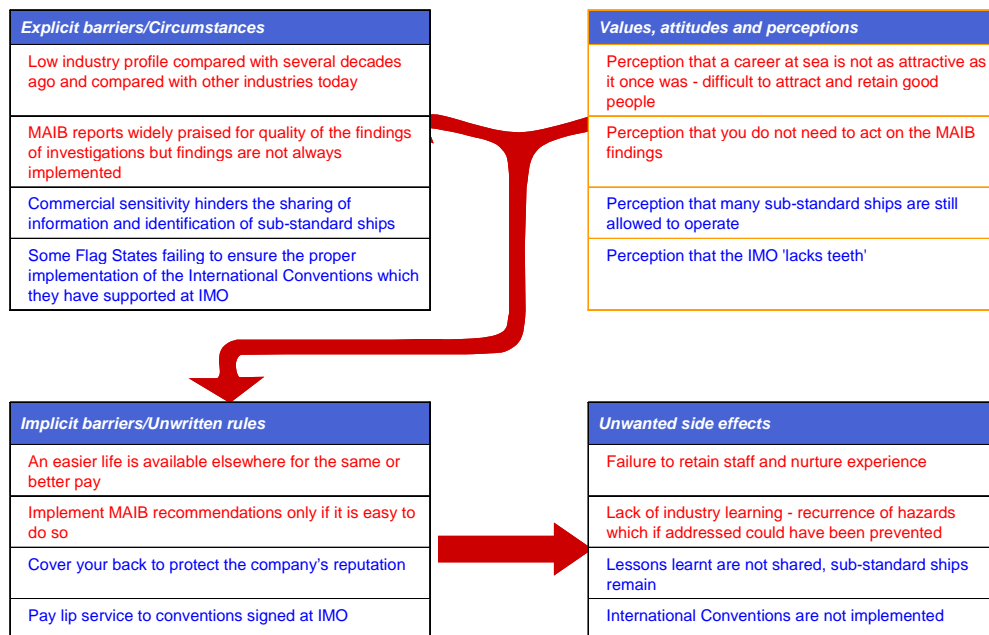
Financial constraints were cited as the main reasoning behind such equipment issues. It is perceived that the attitude towards the costs of safety can vary across the maritime industry. For example, two extremes are evidenced below:

“One of the problems with shipping industry is that commitment varies widely. In some it is very strong, but they are in the minority. Most ship operators still look at safety as an expense - as evidenced by their cost statements. But some companies couldn’t tell you how much they spend” (Shipping organisation)

“Yes, we could operate more cheaply but we don’t.” (Tanker)

4. Industry Structure and Leadership

Industry leaders have an important role to play in encouraging ship operators to raise their standards of safety and to develop an improving safety culture. There is scope for some improvement in encouraging some Flag States to implement the conventions that they signed up to at IMO. Within the UK, MAIB reports are highly regarded, but there is no means of enforcing the recommendations on ship owners meaning that the learning from the investigations may not be realised in practice.



Enablers	Desired outcomes
<ul style="list-style-type: none"> Raising the industry profile through collaboration with recruitment agencies and the press Incentivise cadetship (e.g. tonnage tax) Encouraging the sharing of information - e.g. an industry forum Introducing a requirement for recommendations to be followed up further to MAIB investigations Flag States to adopt some form of Marine Administration to enforce International Conventions 	<ul style="list-style-type: none"> Industry profile raised, and maritime careers perceived as attractive Sharing of information and acting upon lessons learnt International Conventions are implemented across all Flag States

Quotes

Explicit barriers/Circumstances
"The industry does not have the greatest of reputations: there are some skeletons in the cupboard." (Shipping organisation)
"MAIBs reports are excellent and I read them - you can learn a lot from them." (Passenger ferry) "Reports such as the MAIB one will not help - they will just be put on the shelf. " (Shipping organisation)
"The biggest problem is lawyers. There is a reluctance to report things." (Passenger ferry) "The communication of the industry can be very secretive.... For example, when asked about future plans and accident numbers you are often met with clouds of commercial confidence." (Shipping organisation)
"The IMO needs to have powers to audit flag administration. We are not short of regulations, but are short of the implementation that follows from that". (Shipping organisation)

Values, attitudes and perceptions
"Doesn't seem to be a 1st choice career for a lot who come out – they couldn't get anything else." (Liquid bulk cargo)
"Lots of shipping companies do not action findings (90%)." (Shipping organisation)
"One of the problems with shipping industry is that commitment varies widely. In some it is very strong, but they are in the minority. Most ship operators still look at safety as an expense". (Shipping organisation)
"Some flag states are very poor and there is no real overall power to enforce it. IMO need to put more teeth into it". (Shipping organisation)

Implicit barriers/Unwritten rules
"Recruitment is taking a lower slice than it used to. There is a need for better recruitment criteria." (Shipping organisation)
"No one needs to act on MAIB reports, and there is no-one to ensure they do, this should change." (Shipping organisation)
"The Herald of Free Enterprise has caused a cover your backside attitude to everything safety related". (Passenger ferry)
"At the high level the IMO does not have the power to ensure that the flag states meet their obligations. The IMO's job is to produce regulation not enforce, but would be useful if it could assume powers". (Shipping organisation)

Unwanted side effects
"In the next generation of Masters, there is a huge gap with a lack of experience." (Passenger ferry)
"They are often not well thought out, completely reactive, and there is no method at the IMO for looking forward." (Passenger ferry)

Enablers
"At an operational level the industry itself needs to develop something e.g. offshore have website (marine safety website) - internationally we are appalling at messages." (Shipping organisation)
"IMO need to focus more on enforcement - as they don't really have any teeth. For example, if a flag state is not following the convention that it signed up to, then it should either be kicked-out or the insurance market be used as a disincentive through higher premiums". (Shipping organisation)
"There is a voluntary code put out by MAIB, which needs to be mandatory - would be more effective." (Shipping organisation)
"The solution is for the MCA to be obligated to act upon the recommendations made by the MAIB." (Shipping organisation)
"We are talking about how to raise the profile of the industry...we are getting career masters onboard ships to show them the life and dispel myths – e.g. show them the technology and that it is not all hammocks and bunks." (Tanker)

Discussion

In this section, we consider the profile of the shipping industry following a period of declining activity under the UK Flag to around 1998. There has been a recent increase in activity, although not to previous levels, and shipping as a career has lost many of the attractions it could once offer. We examine the roles of not only the Regulators but other organisations, such as the Marine Accident Investigation Branch (MAIB) and the role they have in leadership. We look at the role of the IMO and examine the performance of Flag Administrations and Port States and the effect on the enforcement of safety regulations. We also consider what part underwriters may be able to play in raising standards of operations and compliance and consider the value of sharing information about sub-standard operators as well as accidents.

This section examines the role of industry leaders in encouraging higher standards of safety leadership:

- (a) The industry profile
- (b) MAIB reports
- (c) Flag states
- (d) The role of IMO
- (e) Port States
- (f) Underwriters as industry leaders
- (g) Sharing information – an industry forum

(a) **Industry profile:** concerns were expressed about the failure of the industry to attract young, well-educated recruits. Fewer young people feel encouraged to take up seafaring as a career today and many of those who do start out, later drop out to pursue alternative careers. This may be partly, it is suggested, due to a reduction in opportunities for UK seafarers. Although there is the possibility of rapid promotion paths for a limited number of individuals, many shipping companies who remain have not always been keen to recruit British cadets or junior officers, with the result that there is now a gap or shortage of experienced and trained junior British officers. Young people may not find seafaring attractive as long as it involves long periods away from home and family life and away from the attractions of life ashore. Many ships today spend little time in port and even when alongside, opportunities for shore visits may be restricted. Where their fathers and grandfathers were proud and perhaps grateful to be able follow the sea, today young people are less enthusiastic and find other opportunities for travel and adventure. They find openings in other industries and businesses that offer better pay and conditions, and staying ashore provides a better social and family life.

A 2001 paper in Fairplay journal (Appendix A, Ref: 009) recognised the problems described above concluding that the industry has a significant retention problem. The paper describes that there is unused capacity at maritime academies, and that EU dropout rates in training are 22%.

“Doesn’t seem to be a first choice career for a lot who come out – they couldn’t get anything else.” (Tanker)

The UK has always had a tradition of seafaring but today this has become less so and many people are nowadays largely ignorant of our maritime history and traditions and find little to interest them in maritime affairs.

“We are talking about how to raise the profile of the industry...we are getting career masters onboard ships to show them the life and dispel myths – e.g. show them the technology and that it is not all hammocks and bunks.” (Tanker)

Shipping in general does not always enjoy the best publicity. Whenever it does feature in the media it tends to be because of some horrific accident which has occurred, which puts the ship and its owners in a poor light. The Press tends to concentrate its attention on disasters at sea, such as oil spills and offer little sympathy either to the unfortunate ship operators involved or to the seafarers who may lose their livelihoods as a result. The industry is often treated with something nearing suspicion, although it has to be conceded that in some cases criticisms are not without foundation. Whilst it could be argued that the media equally focuses on the negative aspects of the airline industry, such as air crashes and terrorism, airlines are perceived by the public to offer more tangible benefits than shipping and air travel is more embedded into the public’s sub-consciousness.

“The industry does not have the greatest of reputations: there are some skeletons in the cupboard.” (Shipping organisation)

Despite these problems, it is encouraging that the British government has given some incentive to UK Flag operators to sponsor the training of young officers but disappointing to note the poor employment prospects of such young officers after their training is completed.

(b) MAIB reports: The reports published by the MAIB are well regarded and our investigations indicate that they are widely read and appreciated by seafarers.

“MAIB’s reports are excellent and I read them - you can learn a lot from them.”
(Passenger ferry)

Positive comments were also heard regarding the quality of the MAIB reports, for example compared to other countries' investigation bodies.

However, concerns were expressed in the course of our interviews about the lessons to be learned from these reports and the means by which they might be better promulgated and by which seafarers could be encouraged to study them. The MAIB circulates many copies among shipping companies and posts them on its website. Possibly ship-owners might be encouraged to take further steps to ensure the circulation of these very helpful publications.

More specifically, the reports on individual accidents, which are sent to the owners of the ships concerned at the conclusion of the MAIB investigations, almost always contain recommendations for action to be taken in order to avoid future exposure to similar accidents. The MAIB is currently powerless to insist that such recommendations be implemented and, indeed, the ship-owner is under no obligation to do so.

“No one needs to act on MAIB reports, and there is no-one to ensure they do, this should change.” (Shipping organisation)

We understand from our investigations, that the MAIB is suggesting an alteration to the present rules under which in future, if the ship-owner fails to respond to questions from the MAIB about their recommendations, they may be reported to the Secretary of State. Whether any other means of ensuring that such recommendations are complied with are feasible, seems unlikely.

(c) **Flag states:** many of those interviewed expressed concerns about some flag states, which, although signatories to the international maritime conventions, do not properly ensure that the ships which fly their flag comply with the provisions of the legislation.

“Some flag states are very poor and there is no real overall power to enforce it. IMO need to put more teeth into it”. (Shipping organisation)

The traditional maritime states, which have a long history of seafaring and ship-owning, have always generally operated to high standards, with their domestic legislation, in some cases setting higher standards than those required by international agreement. Such states have their own maritime administrations, which are a part of a government department, often under the tutelage of a government minister. These administrations endeavour to ensure that the ships which fly their flag, are properly manned by crew who are well trained and fit in every respect for their duties at sea. They also ensure, through regular surveys and inspections of ships that the ships comply with all the conventions, ultimately issuing the appropriate certification.

Other flag states may not have well developed maritime administrations, nor in some cases are there dedicated government departments with specific responsibilities for shipping. Such flags delegate many of their responsibilities to Recognised Organisations, such as Classification Societies. Whilst many of these recognised organisations operate to the highest standards, there are some which may not be so efficient or diligent in their duties. Also it must be borne in mind that many Classification Societies may have to rely on non-exclusive surveyors in order to be able to carry out work on a worldwide basis.

The result of this is that there may be ships trading which, although they carry Certificates purporting to show that they comply with the Statutory Regulations, do not in fact always do so. This is not an issue, as far as we are aware, on Red Ensign ships, but it does have an impact on standards in an industry that is international in its nature.

(d) The Role of the IMO: “At the high level the IMO does not have the power to ensure that the flag states meet their obligations. The IMO’s job is to produce regulation, not enforce, but would be useful if it could assume powers”. (Shipping organisation)

Many of those interviewed commented on the role of the IMO as an industry leader. A common issue raised was the fact that while the IMO as a legislator has undoubtedly produced valuable and effective new Conventions, it has no power to ensure that Flag States properly enforce the regulations to which they have signed up and which they have ratified.

It must be recognised that it was never intended that the IMO should take up the role of regulator or of enforcement. The IMO is the forum within which the member states can discuss the business of the shipping industry and formulate legislation to which the member states agree. But, as we have discussed above, it is the role of the flag state to take away the regulations, to incorporate them into domestic law and then to enforce them.

However, the IMO has not been inactive in taking measures to encourage members in their enforcement of maritime legislation. For example, when the STCW(95) Convention came into force, they introduced the concept of the “White List” which included those states which had been able to demonstrate to IMO their compliance with the provisions of the Convention, but which excluded those who had failed.

For some time the Flag State Implementation Committee has been active in IMO and has introduced a number of initiatives in order to encourage flag states to better perform their responsibilities with respect to enforcement. Not the least of these is the effort to encourage flag states to self-audit (the Model Audit Scheme) and produce the result of such audits to the IMO, which has recently been recognised as a potentially good solution to the problem of enforcement.

While all these efforts on the part of the IMO must be applauded, it seems unlikely realistically, to suggest that it could ever take up the role of enforcement as suggested by some interviewed for this research:

“IMO needs to focus more on enforcement - as they don’t really have any teeth. For example, if a flag state is not following the convention that it signed up to, then it should either be kicked-out or the insurance market be used as a disincentive through higher premiums”. (Shipping organisation)

While the intent behind this suggestion seems reasonable, in the light of the above and perhaps even more realistically, because IMO relies on the financial contributions of all its members in order to survive, this seems unlikely. It also should be recognised that if ultimately the IMO does fail then it may be superseded.

(e) The European Maritime Agency (EMSA): During our research interviews, our attention was drawn on a number of occasions, to the growing influence in maritime affairs, of the European Union and to the possibility of similar regional initiatives overtaking the role of the IMO. The relatively recent establishment of EMSA, an agency of the European Union, has already had some impact on European shipping legislation, notably in the field of pollution prevention. Many EU member countries are maritime states with a long tradition and experience in shipping affairs and are themselves individual member states within the IMO and bound by any decisions taken there. It must, however, be acknowledged that being a smaller and arguably more easily managed group, they are, through EMSA, able to act more quickly in situations where they feel that new legislation is called for.

Whilst the forum for industry debate and action is the IMO, it might be argued that EMSA may act as a catalyst, prompting more immediate action from IMO. It appears that in the future, the influence of EMSA and possibly other regional agencies may be expected to grow, hopefully in tandem with the IMO and to the benefit of the shipping community in general.

(f) The Port States: we have heard during the research, much favourable comment upon the activities of the Port States. The countries signatory to the Paris Memorandum of Understanding on Port Control, are complimented on the work which they do to ensure that the ships which visit their ports comply with the International Conventions. Their powers to detain ships and in some cases to deny entry are widely supported as also are the records which are kept of non-compliant ships. These records are now widely circulated and are available to scrutiny by interested parties. As the network of other Memoranda widens, so the influence of Port States increases and the chances of sub-standard ships being freely able to trade, diminish. The publication of this data as well as the Annual Reports produced by the Port States, which analyse and comment on the results of port state inspections, was widely commended by many of those we interviewed.

The Port States, as industry leaders, clearly have an important role to play in developing an improved safety consciousness at sea. Currently, they are proving to be the most effective, in many cases, taking over the role of the Flag States.

(g) Underwriters as industry leaders: underwriters are in a position to influence the standards to which the ships that they insure are operated. Practically every foreign-going ship is fully insured and has to be so in order to trade effectively. Both hull and machinery underwriters and protection and indemnity clubs can and do play a part in the fight against sub-standard ships. Some years ago, London Hull underwriters introduced a system of surveys to be carried out on the ships that they insured. The current state of the insurance market may, it must be conceded, have some impact on the effectiveness of such initiatives, but at the time it proved an effective way of identifying unsatisfactory ships. When insurance is refused, sub-standard ships cannot trade.

Similarly, many P&I Clubs have introduced condition surveys and regular visits to the ships that they insure, in order to check that they are properly operated, managed, manned and maintained. Ships requesting cover may be refused if they do not satisfy the standards laid down and ships already on risk may find their cover suspended or at any rate, prejudiced, if they fail the club surveys.

This and other loss prevention initiatives introduced by P&I Clubs has undoubtedly had a beneficial effect as can be verified by an analysis of claims paid by the clubs since the introduction of such schemes.

Just as the actions taken by the oil majors by introducing pre-hire inspections, in order to ensure the standards of the ships which they charter, have proved highly effective in the oil industry, doubtless a similar move by cargo interests, including cargo insurers, might have a parallel beneficial effect.

(h) Sharing information - an industry forum: some of those interviewed strongly expressed the view that the sharing of information about safety matters, within the industry, including the development of safety culture in shipping companies, would be of value to all concerned, including ship operators and seafarers.

“At an operational level the industry itself needs to develop something e.g. offshore have website (marine safety website) - internationally we are appalling at messages.”
(Shipping organisation)

It must be acknowledged that the shipping industry is the sum of its parts: there are many different shipping companies whose ships fly the Red Ensign, each with differing trading interests and each fiercely defending its own methods and policies. However, within those companies there was, in our view, a consensus, that the feedback of information to all within the company about accidents at sea and other mishaps, including near misses, was of the utmost importance – but could be shared more widely. By explaining the accidents that occur and sharing the facts, others can benefit thus avoiding future incidents.

Of particular interest, a paper on safety culture by the International Shipping Federation (Appendix A, Ref: 004) argues that commitment to safety from the top is critical for a positive safety culture, and that this requires decision-makers to understand the true cost of accidents.

We noted that it was widespread practice in many of the companies we visited to inform sea staff of safety reports and to make recommendations for change and improvement always carried out without attributing blame.

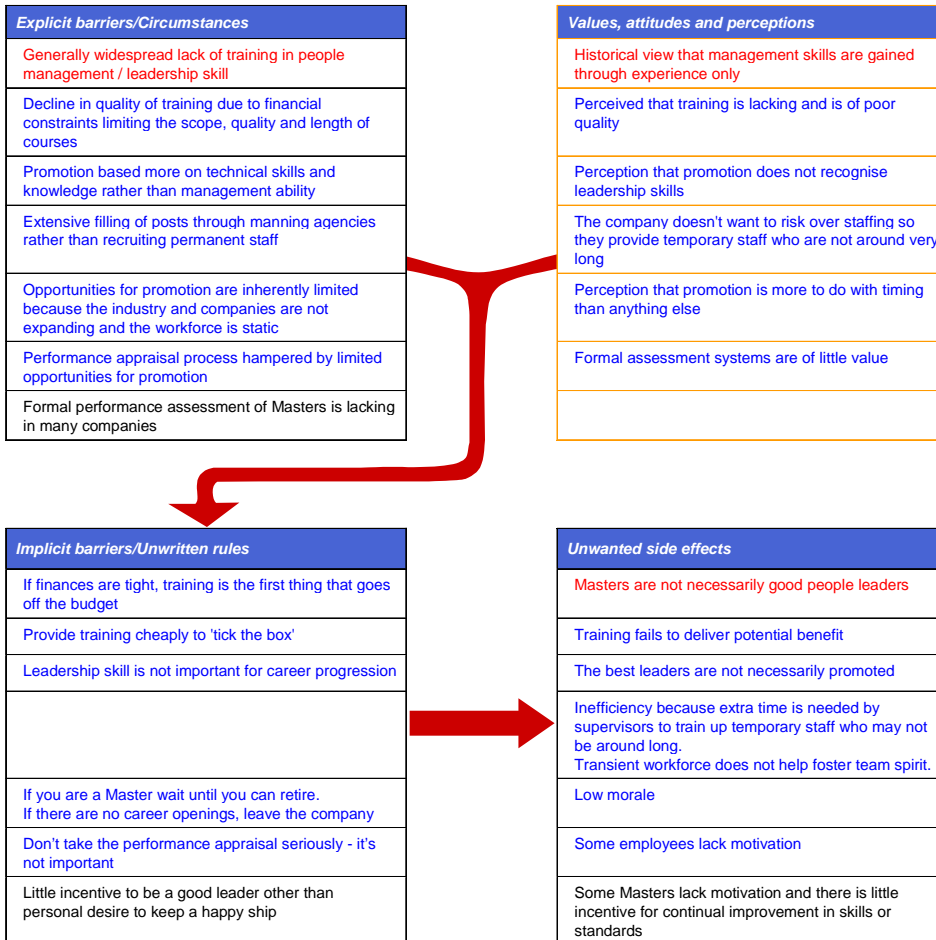
Possibly, by establishing some sort of industry forum, there might be some merit in circulating more widely company safety reports. Similarly, other safety-related matters of common interest to owners of ships flying the Red Ensign, might be discussed and aired to the benefit of all concerned. Perhaps this is a role already partly filled by the Chamber of Shipping.

Summary

Our interviews suggest that industry leaders have an important role to play in encouraging ship operators to raise their standards of safety and to develop an improving safety culture. There is, in our view, scope for some improvement or increased activity in this respect, with some parties, notably Flag States (albeit foreign), dragging their heels. In the UK, MAIB reports are highly regarded, but there is no means of enforcing the recommendations on ship owners, meaning that the learning from the investigations may not be realised in practice.

5. Competence Management

There is more emphasis on technical skills than on leadership abilities in the training provided and in promotion criteria through the ranks to Master. Training quality is generally regarded to be low, suffering in particular from cost reduction drives which put pressure on training providers to reduce the scope and length of training courses.



Enablers	Desired outcomes
Integrate training in effective leadership/people management into certificate structure Introduction of specific leadership skills promotion criteria Creation of further opportunities for promotion, and review of appraisal process Move towards permanent staff where possible Review of the quality of current training	Completion of leadership training before promotion to Master Promotion of competent leaders Permanent crew that know the ship well

Quotes

Explicit barriers/Circumstances	Values, attitudes and perceptions
"There should be more courses for Senior Officers where safety leadership is encouraged". (Shipping organisation) "Less that 5% say that they have had leadership training". (Shipping organisation)	"There is minimal leadership training at the moment. There is safety training - but no leadership training." (Shipping organisation) "Current training not aimed at management." (Liquid bulk cargo)
"The training provided is very poor. The problem with training is that the industry drives down costs, for example trainers are asked to provide training in one day rather than two and of course the quality suffers. You get what you pay for". (Passenger ferry)	"People send you on training at low cost - then tick the box to say it has been done". (Liquid bulk cargo) "The maritime industry is way behind others - we are playing catch up. For example, what a Cadet is learning about management is way less than someone working at B&Q would get". (Passenger ferry)
"Generally people are more often than not promoted on technical ability." (Shipping organisation)	"We do not as an industry pay enough attention to promoting the best managers. More emphasis is needed on the person being an effective manager - this can affect safety". (Shipping organisation)
"It is difficult to promote people." (Shipping organisation) "There are no promotion criteria - it is a very flat organisation. Don't get promoted." (Passenger ferry)	"The use of agency staff is very time consuming because they come in and need teaching everything and training up." (Passenger ferry)
	"Promotion is very much down to good timing. Some make Master at 25 years old and stay there for 30 years, but I was in the wrong part of the industry, I just missed out". (Passenger ferry)
	"The guidelines are OK but there are not enough gradings (satisfactory / not satisfactory)." (Passenger ferry) "The process isn't really useful - don't learn about yourself." (Passenger ferry)
Implicit barriers/Unwritten rules	Unwanted side effects
"At the end of the day training is the easiest thing to cut, but you mustn't do that" (Liquid bulk cargo)	"There is a big shortage of people with experience due to the lack of training over the last 20 years" (Shipping organisation) "Some companies take management ability into account, but some do not". (Shipping organisation)
"MY CPSE training has been cancelled 3 times - apparently because we are too busy to release staff to be trained." (Passenger ferry)	"People send you on training at low cost - then tick the box to say it has been done. There is no concept of getting benefit from it." (Passenger ferry)
"People get complacent when they have been around a long time. They think they know it all". (Passenger ferry)	"The traditional system is not successful in bringing forward good leaders". (Shipping organisation)
"The company doesn't want to replace people because it costs money hence the use of agency staff" (Passenger ferry)	"Team spirit difficult in transient workforce situations " (Shipping organisation) "Agency people don't know the ship or what exactly to do" (Passenger ferry)
	"Some companies, even those with a good reputation, are slow to promote which is why I moved in the end from my last job." (Liquid bulk cargo) "People leave because they can be promoted quicker elsewhere." (Liquid bulk cargo)
"I've not had an appraisal for a couple of years. It's not taken seriously as far as I know. People don't see the point of it." (Passenger ferry)	"The appraisal system is not really effective in nurturing good performance out of people." (Passenger ferry)
"There are no incentives offered other than professional pride. There are no financial rewards for safety performance. We do not consider that such incentives assist leadership." (Shipping organisation)	

Enablers

"There is a need for (promotion) criteria that is leadership orientated. I would like to see: training received criteria, crew resource management, and people management skills" (Shipping organisation)

"A 360 degree appraisal is a good idea; good professional people should have nothing to fear." (Shipping organisation)

"Morale is kept up by feeling appreciated – you need both a carrot and stick though. They need to feel wanted and part of the system." (Tanker)

"Introduce continuity of employment so that people become company people." (Shipping organisation)

"Training management should be implemented and include: (1) communication - how to receive and give to the organisation. Closed-loop processes. (2) Management structure - the way you should organise departments. (3) Strategies for coping with blockages: breaking down the problem." (Shipping organisation)

Discussion

This section reviews the arrangements that shipping companies have in place to manage the competence of the Master in delivering effective safety leadership.

Training: the competence of an individual to fulfil a particular role is generally regarded as a combination of factors such as:

- Knowledge
- Skills
- Experience
- Training

Whilst little concern was raised by those interviewed about leaders' knowledge, skills or experience, many were highly critical of training provided, specifically in the following two areas:

- Training for officers and the Master does not include people management or leadership.
- Training is perceived to frequently suffer from financial constraints, often being the first item on the budget to be cut. There is a view that training providers are being asked by financially constrained companies to reduce the scope and length of training courses. This is perceived to be undermining the quality and effectiveness of training.

"There should be more courses for Senior Officers where safety leadership is encouraged" (Shipping organisation)

"Less than 5% say that they have had leadership training" (Shipping organisation)

“No management skills are taught. It is only when staff arrive ashore that they begin to undergo any form of management training. Looking into changing this is clearly vital”
(liquid cargo)

The concerns regarding training have been recognised in other studies:

- A study into “Leadership Training: A Strategy for the Industry” conducted by a working group (Appendix A, Ref: 003) found from a survey of over 500 individuals that 90% recognised the need for leadership and management training, and that half felt that these needs were not addressed by current courses. Furthermore, 86% felt that management training should be a requirement for promotion to senior rank (see also next section on promotion).
- The perception that training suffers from financial constraints is backed up by the UK P&I Club’s report “The Human Factor” (Appendix A, Ref: 001) that concludes that although the importance of training is recognised widely, it is also often the first to fall under the economic knife.

Although there was little complaint about the experience of today’s qualified Masters, some interviewees expressed concern that there will be a shortage of qualified seafarers in the near future. The UK P&I Club (Appendix A, Ref 001) concluded that some leading ship managers are recognising this problem, and are actively developing training programmes to build a pool of permanent officers to fill posts now and into the future.

Promotion: traditionally, an individual would move through the ranks eventually gaining his Master certification based largely on seniority and technical abilities, with much less emphasis on his ability to manage people effectively.

“Generally people are more often than not promoted on technical ability” (Shipping organisation)

“We do not as an industry pay enough attention to promoting the best managers. More emphasis is needed on the person being an effective manager – this can affect safety”
(Shipping organisation)

When asked, all seafarers consulted say that they have at times worked for Masters who are very poor people managers and also with Masters who are naturally good leaders. There are mixed opinions on whether the traditional view of the Master who is a hard dictator holds true today, but what is apparent is that many different leadership styles exist, depending on the personality of the Master.

The opinions expressed here are reinforced by those of another survey on leadership training (Appendix A, Ref: 003). The survey shows that people are concerned that there is a need for good leadership training particularly for dealing with emergency situations and that a lack of decent training might contribute to:

- The passing by of modern leadership ideas which may be raised by the younger crew
- Poor leadership which in turn leads to poor morale and under-performance
- Difficulty in managing foreign crews
- Some leaders finding it difficult to listen and take criticism
- Some managers falling into autocratic styles that ultimately result in poor communication and teamwork

The officers of today who aspire to gain their Master's certification in general have different *values* than the previous generation. Today, there is an increased emphasis on managing people, and in open communication. There is some perception of a gap between the current Masters who have a great deal of experience, and the upcoming Officers who lack experience but are more aware of their management responsibilities. Many believe that provided the industry can retain these Officers and provide them with career opportunities, the Masters of the future have potential to be better leaders than today's Masters.

"The traditional system is not successful at bringing forward good leaders". (Shipping organisation)

However, opportunities for promotion are generally limited, mainly because of the fairly static organisations with little or no growth (or even downsizing). A Master may stay in his position for many years, which holds up opportunities for Officers below. The alternative for many is to move around between companies as new opportunities do become available.

"There are no promotion criteria – it is a flat organisation. Don't get promoted". (Passenger ferry)

Staffing: a commonly raised issue was the increased use of manning agencies in place of recruiting full-time permanent staff. The use of agency staff is blamed on the company who wishes to save money, or at least reduce their financial risk.

"The company doesn't want to replace people because it costs money hence the use of agency staff". (Passenger ferry)

But does the use of agency staff present any problems to effective leadership? One issue is that rapid changeover of staff through agencies creates additional work for those who supervise them, as they will need introductions to new equipment and ship procedures. This creates additional burden for leaders who already complain about overwork due to low manning levels.

“The use of agency staff is very time-consuming because they come in and need teaching everything”. (Passenger ferry)

Additionally, it is challenging to build up rapport amongst a crew who may be moving around between ships or companies frequently.

Appraisal and performance: many criticised the performance appraisal process for not being taken seriously. Some people had difficulty remembering whether or not they had actually had their last appraisal and stated that it was not useful in their personal development.

“The appraisal system is not really effective in nurturing good performance out of people”. (Passenger ferry)

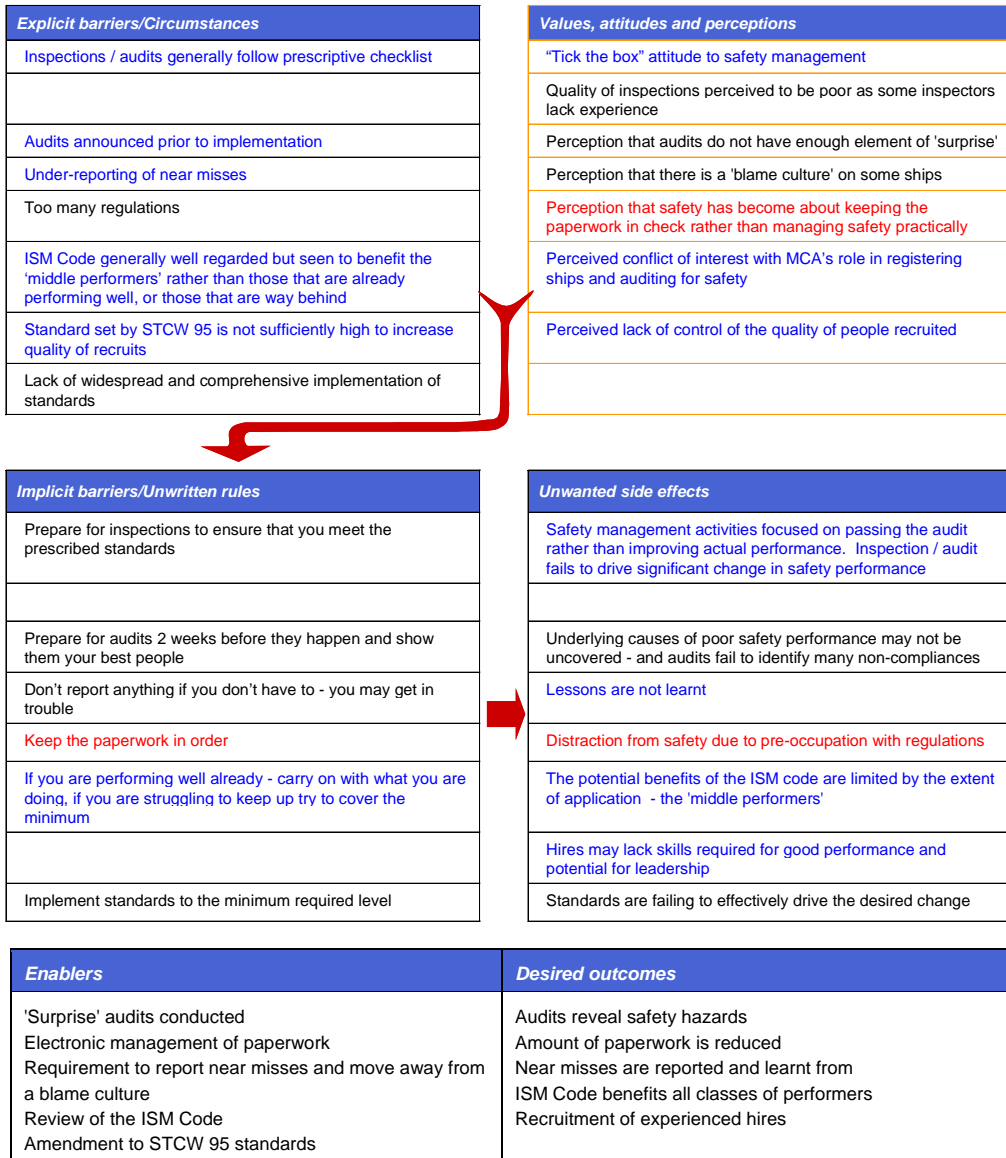
“I’ve not had an appraisal for a couple of years. It’s not taken seriously as far as I know. People don’t see the point in it”. (Passenger ferry)

There was little evidence of financial or other rewards for good performance (safety or otherwise).

Another issue raised was the appraisal of the Master. Some companies have introduced recently a ‘360 degree’ feedback process for the Master, in which Officers are asked as part of the process to provide feedback on the Master. Those consulted felt that this was a positive move, provided that people felt they could be open and honest.

6. Standards and Implementation

The ISM Code is regarded as providing a good basis for safety management. However, the extent of its implementation, and the implementation of other standards, is a widely held concern. ISM audits and statutory surveys are also widely perceived to be of very limited benefit in helping to drive forward positive changes in safety management and leadership.



Quotes

Explicit barriers/Circumstances	Values, attitudes and perceptions
"There is a complacency problem with checklists - people don't use them any more properly". (Liquid bulk cargo)	"There is a lack in the industry of the whole concept of trying to prevent a future accident. People are more concerned with trying to do paperwork". (Shipping organisation)
"There is no industry forum. Incident investigation in the UK is OK, but near misses do not need to be recorded. They should be made obligatory". (Shipping organisation)	"Industry in general poorly organised with a 90% blame culture." (Liquid bulk cargo)
"The MCA are paying us lip service; they see a false picture. They do not just come out of the blue when they do checks, so everyone prepares for them coming two weeks in advance so they do not find anything in the audit". (Passenger ferry)	"The focus on safety is legal safety" (Passenger ferry)
"We do not need any more regulations" (Shipping organisation).	"Some people pass the exams but still aren't suitable". (Dry cargo)
"ISM is a good example as it is making people responsible for their own safety and documenting things". (Shipping organisation) "ISM code has acknowledged that good companies are doing well, it has helped the 'middle companies', but has not affected the more poor companies." (Shipping organisation)	
"STCW 95 is a bad example: it has set a level but the standards are too low". (Shipping organisation)	
"It is a heart and minds thing - we have plenty of standards, but we need to implement them effectively to make them work". (Shipping organisation)	

Implicit barriers/Unwritten rules	Unwanted side effects
	"The Auditors and MCA only really care about getting the right boxes ticked - they care much less about actual safety which isn't the same thing". (Passenger ferry)
	"On ships, the focus is becoming manage paperwork rather than manage safety". (Passenger ferry)
"Its human nature to cover things up. There is a fear of criticism and reprisal from the company" (Shipping organisation)	"We shouldn't have a blame culture because you don't learn anything -people just clam up." (Liquid bulk cargo)
"On an MCA drill the ship puts the most experienced people in positions which would be exposed and hide the rest. This means they do not show the worst people". (Passenger ferry)	
"There is generally a low morale associated with regulations and paperwork". (Shipping organisation)	
The UK is not the leader as a flag state... Enforcement and its ability to ensure that regulations are fully complied with is wafer thin. Safety is compromised because the regulatory authorities are trying to balance two things: enforcement, and attracting ships to register." (Shipping organisation)	

Enablers	Desired outcomes
'Surprise' audits conducted	Audits reveal safety hazards
Electronic management of paperwork	Amount of paperwork is reduced
Requirement to report near misses and move away from a blame culture	Near misses are reported and learnt from
Review of the ISM Code	ISM Code benefits all classes of performers
Amendment to STCW 95 standards	Recruitment of experienced hires

Discussion

This section explores the effectiveness of standards in driving improvement in safety and leadership, and how well they are actually implemented.

A commonly held opinion among many of those interviewed is that standards are neither widely nor rigorously implemented, and that this is one of the most significant barriers in further progress in safety management and leadership.

ISM Code: the ISM Code was most commonly raised by interviewees, and is generally highly regarded as setting out basic, common sense principles for good safety management. Overall, it is regarded as having benefited the standard of safety management and leadership. However, implementation of the Code was less well regarded. A view held by some interviewed is that the Code has brought improvements more to those who were previously ‘middle of the pack’ in their safety management arrangements, but those who were leading the field anyway have not had to significantly change their arrangements. Companies who were previously struggling to invest in formal safety management arrangements will also have benefited little from the ISM Code – and it is widely perceived that there are many sub-standard ships that continue to operate.

“We do implement – but always to the minimum required”. (Shipping organisation)

“ISM is not needed by good ships and is actually demotivating and demoralising and has become 70% cover your backside. It is actually a detriment to good dynamic ships”.(Shipping organisation)

The Nautical Institute’s journal ‘Alert’ (Appendix A, Ref: 012) has reported that a significant proportion of the industry is struggling to implement the ISM Code because of an ‘inadequately functioning safety management system’. Problems cited include excessive paperwork, ‘irrelevant’ procedures being forced upon people, ‘ticking the box’ checklists, lack of company support, and a lack of people and time to implement. The review concludes that some companies are managing to effectively implement the ISM Code, because they are operating successful safety management systems.

The conclusion from this would appear to be that the ISM Code has been more successfully implemented where a functioning safety management system was operating anyway, but has failed so far to instigate the creation of better management systems where they were previously lacking. This emphasises the importance of instilling effective leadership qualities in individuals, as where safety management systems are lacking, a committed and effective leader can have a significant positive influence on safety.

Other Standards: another standard which was frequently raised is “Standards of Certification, Training and Watch-keeping” (STCW 95). The most commonly held opinion is that the standards set by STCW 95 are too low to have had a positive benefit in the UK shipping sector. The following quote from an individual within a shipping organisation illustrates this opinion:

“STCW 95 is a bad example: it has set a level but the standards are too low”.

These examples highlight the inherent difficulty in trying to legislate for a common standard of safety management in such a complex and diverse industry in which financial constraints are very acute, hence the emphasis placed on ISM. It also highlights the shortfalls in the ability to enforce standards. Indeed the Paris Memorandum Annual Report 2002 (Appendix A, Ref: 010) reports that one-third of ships did not comply with (at the time) new crew certification requirements – on 853 ships out of 2400 inspected at least one crew member did not have the correct STCW 95 certification.

Implementation: the IMO was originally founded as a consultative organisation and has now become the United Nations maritime arm. In excess of 100 nations attend the plenary sessions of IMO in London. Existing conventions are constantly under review and maritime affairs are monitored with occasionally the recognition of the need for a new convention. The format and content of both new and amended conventions is debated by the Legal Committee and eventually the final product is put to vote. Once agreed at IMO, it is the decision of each Flag State to take away the new text and to return home and ensure that it is incorporated into the domestic law and thereafter to enforce it through their Flag Administration (in the UK the Merchant Shipping Act and the MCA). The problem is that a Flag State may lack the will to do this, and many have no marine administration, leaving the enforcement of the law (if any) to third parties such as the classification societies, who survey the ships and issue the certificates on their behalf.

During our research interviews, we heard little criticism of the MCA and the standards that apply to ships flying the Red Ensign. We have no reason to suggest that any of the criticisms laid at the door of some other flag states would apply here.

One concern which was, however, expressed, related to the shortage of suitably qualified personnel to undertake statutory survey work on behalf of the Agency and the allegation that the MCA are obliged to employ personnel without sea-going experience to act as surveyors in carrying out such surveys.

ISM audits: apart from the long established periodic statutory surveys carried out by the MCA and their supervision of the training and certification of seafarers, another relatively new mechanism for ensuring that standards are implemented is the ISM audit which is carried out periodically by MCA, not only on board ship but also in the operator's offices. There was some criticism about the effectiveness of these audits in driving positive change. One specific criticism relates to the fact that audits are known about in advance, and because they are very much checklist based, it is apparently easy to prepare for the audit and 'score' better than the actual safety management arrangements on board might deserve. This problem is illustrated by the following quote from an officer working on a tanker:

"Poor companies simply prepare for audits in advance and in my old company we were told what to say before the auditor came round".

In addition there is some criticism (more among active seafarers) that the auditors are perceived to lack practical seafaring experience, and therefore may miss apparently obvious shortfalls. The net result is that the audits will not be fully effective in identifying shortfalls in safety management, and therefore in helping to drive any change. Checklist-based inspections do at least help to ensure some consistency of application, but may fail to probe more deeply into underlying issues affecting safety. The following quote illustrates one view held by individuals working on passenger ferries:

"The MCA are paying us lip service – they see a false picture".

"The auditors and MCA only really care about getting the right boxes ticked – they care much less about actual safety ..."

"Checklists are important but it has gone mad. If you have a collision you need to act fast, not run away to get a checklist".

The comments would suggest that a move towards less prescriptive audits with more highly experienced auditors could instigate a more beneficial approach in which lessons are learned, and the audit is regarded as a useful learning experience rather than a 'tick in the box'.

Near miss reporting: one area in which there was considerable variation in opinion, was that of reporting of near misses. Some of the oil carrier companies we consulted mentioned that they have rigorously implemented near miss reporting systems and importantly that the Master stresses the importance of near miss reporting and removes any element of a blame culture. Some companies also had instigated behaviour-based inspections, which involve all crew members on rotational basis (in pairs). In these companies, there was a high degree of confidence that most near misses would be reported, and that the company assessed, analysed and communicated any lessons learned (the only criticism being that the inspections themselves can take up valuable rest time, and that communication can be excessive). In more isolated cases, there was perceived to be a blame culture, in which near misses would be very unlikely to be reported. The following quotes illustrate the opinions of individuals from a shipping organisation and active seafarer on oil products ships:

“It’s human nature to cover things up. There is a fear of criticism and reprisal from the company”.

“Industry in general is poorly organised with a 90% blame culture”.

CHIRP is an independent and voluntary reporting programme that “...aim to provide a non-attributable compound of information between companies, individuals and the regulator in the maritime industry. They try to capture what otherwise would not be communicated.” The charity carries out research on the causes of maritime near misses and accidents through a confidential reporting system for the collection of Human Factors-related safety issues. They analyse data and trends and notify interested bodies. CHIRP is illustrative of how the industry can effectively encourage the reporting of near misses, and similar models have been used in other industries.

Summary

In summary, it is a widely held opinion that there is a sufficient number of standards, but the incentives to implement them are lacking. Auditing is regarded as not being effective in helping to control implementation of standards. There are examples of companies (perhaps most notably among oil products carriers) who have well-developed management systems in which continual improvement is sought where regulatory standards are regarded as a lower threshold only. However, leaders in many companies lack the motivation to rigorously implement standards to anything above the required minimum level.

7. Comparison with Other Industries

A comparison of the findings of this research with the leadership issues in other industries shows that the maritime industry, although in some respects faring well, presents some unique challenges by the very nature of its diverse and complicated structure. The following six areas are discussed:

- Local leadership culture
- Industry leadership
- Regulation and standards
- Financial constraints
- Accident investigation
- Training

Local leadership culture

At the micro level, strong leadership is something of a tradition in the maritime industry, and in this sense the role of the leader is well embedded into day-to-day operations. The natural division into manageable units - ships - means that leadership is to some extent very natural and goes without question. In comparison, the rail industry has no such embedded leadership at this level, although there are various bodies and associations that provide much needed co-ordination of the various companies (such as the Association of Train Operating Companies, Infrastructure Safety Liaison Group, and the Railway Industry Association (RIA) which is the trade association for the UK railway supply industry with 140 member companies).

Industry leadership

The greater challenge in the maritime Industry is how to create more consistent leadership practices at the macro level; across a fleet of ships within one company, and at the wider level, across a Flag State and across International boundaries. The ISM Code was intended to make operators more accountable and as companies strive for stronger corporate governance, there is an increasing tendency to provide leadership from the shore, which introduces a new set of challenges. Where this works well there is good sharing of information, good communication and consistent working practices. The downside is that the Master may feel that while his overall responsibilities have not diminished, his traditional role is undermined and the leadership issue becomes confused.

Here there are some parallels and also some differences with other industries. The rail industry has suffered from a lack of strong leadership since privatisation, and has seen numerous reorganisations in an attempt to create a competitive market whilst retaining overall control. Currently, regulation of health and safety is provided by Her Majesty's Railway Inspectorate (HMRI) who considers, accepts and monitors compliance with the safety cases of the railway companies; approve new works and equipment; conduct inspections; investigate accidents and complaints and enforce the Health and Safety at Work etc. Act 1974. There are 25 passenger train operating companies (TOCs) and four freight operating companies providing domestic services in Britain. Each TOC has to produce a 'Safety Case', in accordance with regulations introduced under the Railways Act 1993, in order to operate trains on Network Rail Controlled Infrastructure.

However, the rail industry is in yet another period of significant change. The recent rail review calls for further restructuring – most notably in the context of safety leadership, moving safety regulation from a separate body (HMRI) to the Office of the Rail Regulator (ORR). Indeed, as a result of the rail review the TOCs will be required to deliver more efficient working with the infrastructure owner, Network Rail, bringing track and train closer together operationally to mend the rift that has grown since privatisation. The roles and responsibilities of each part of the industry will be clarified through new local agreements, and their incentives brought into line with one another. The number of franchises will be reduced and they will be aligned more closely with Network Rail's regional structure.

Regulation and standards

In the rail industry there are a vast number of overlapping and complicated standards at various levels. In this sense, Rail Safety and Standards Board (RSSB) provide 'leadership' by producing Group Standards that set the requirements to which all company standards must comply. RSSB also sponsor a programme of research that benefits their members (although the budget made available for this programme has been variable over the past three years). They also produce guidance, and gather and disseminate data and risk models through the Railway Group. RSSB's ability to 'lead' is to some extent weakened by the fact that they are owned by major industry stakeholders.

In aviation, the International Civil Aviation Organisation (ICAO) is responsible for ensuring that International Standards and Recommended Practices are adopted. ICAO has recently established an auditing function to determine the status of implementation in each of the 188 member states. In the UK, the Civil Aviation Authority (CAA), provides industry safety, economic and technical regulation with a remit covering commercial aspects, training and certification of personnel.

Unlike most other national regulatory bodies, the Civil Aviation Authority is funded entirely by the commercial air operations it is charged to oversee.

In 2003 the European Aviation Safety Agency (EASA) took responsibility away from the EU National Authorities for the airworthiness and environmental certification of products, parts and appliances. The EASA rules for continuing airworthiness will be implemented at staged intervals over the next five years. Where EASA rules are not yet in place, the national requirements of Member States still apply.

In the maritime sector, the rules for the construction, maintenance and operation of ships are similarly governed by International conventions but by comparison these are enforced in a less coordinated manner.

So, whereas the maritime industry has a tradition of the leader at the local level, the rail industry has something of a tradition in rules and standards that set a much more prescriptive code for operating safely. It is only since the introduction of the ISM Code, which came fully into force only in 2002, that individual shipping companies have been required by law, to establish a Safety Management System, which identifies all operational and maintenance tasks as well as emergency situations and which clarifies the procedures to be followed, in line with the spirit of the Code.

Financial constraints

One common barrier experienced by the maritime and rail industries is the constraint imposed by limited financial resources. This was repeatedly raised as an issue throughout this research, and may adversely influence commitments to training and other initiatives (this Chapter section 3). Drives to reduce costs are a common ongoing theme on the railway - the difference being that the railway is a public service which requires subsidy in order to operate with no prospect of generating revenue overall. The difficulty here is how much money is provided by the government to subsidise the railway. The current theme on the railway may be summarised as delivering safety through reduced costs.

In contrast, the aviation industry is growing four times faster than the UK economy. The government published a white paper “The Future of Air Transport” in December 2003 in which it sets out a strategic framework for the development of airport capacity in the United Kingdom over the next 30 years, against the wider context of the air transport sector.

No such similar planning takes place in the maritime sector: indeed successive UK governments have been criticised by ship operators for their evident lack of interest and support for UK shipping. Success for the maritime sector is subject to market forces. Its general well being or otherwise, is a consequence of the state of the freight market – which is currently healthy and hopefully conducive to a healthy industry.

Accident investigation

The investigation of accidents forms a part of the overall safety leadership of industry. Here, the maritime and aviation industries are similar – both having an independent body responsible for investigating accidents to provide recommendations for improvements and to share lessons learned with the industry (the MAIB and AAIB respectively). In this respect the rail industry has lagged behind, only recently has an equivalent body (the RAIB) been established, with a plan to be fully operational in spring 2005. There is, however, an open enrolment three-day learning programme in accident investigation available to all individuals who participate in some way in the accident investigation process.

Training

One of the key findings of this research is the lack of training provided in people management and strategic safety management (this Chapter section 5). In this respect the maritime industry may be considered to lag behind the rail industry; strategic safety management training is available for all senior managers on an open enrolment basis. To date, more than 1,000 individuals have successfully completed the two-day learning programme. In the aviation industry, human factors training is compulsory for all staff involved in maintenance, from the sharp end to the most senior levels of management.

III. Core Safety Leadership Qualities

This chapter explores the leadership qualities that are considered desirable in providing effective safety leadership, concentrating on the role of the Master:

- Firstly, we describe a list of core leadership qualities that have been identified through the literature review and discussions with those consulted for this research.
- Secondly, we analyse why each quality is important for helping to ensure effective safety leadership, review the extent to which each quality is already present among leaders, and provide suggestions as to how any gaps may be closed.

1. Leadership Qualities

Ten key qualities were identified through literature review, comparison with other industries, and through discussion with those interviewed for this study. Each of the qualities is described below, with reference to supporting quotes from interviews where appropriate (note that the list is in no particular order).

1. Instil respect and command

Gaining respect of the crew requires the leader to demonstrate that they are competent, and act to the benefit of the ship, crew and company, not for self-interest. Good leaders will utilise the collective intelligence and abilities of their crew and assistance from shore management in analysing problems and in generating solutions, but must have the confidence to make and implement the decision themselves, acting according to their authority. At times, this may mean having to choose a more difficult and less popular decision.

“Commanding respect is a combination of having the right knowledge, skill and attitude where attitude is self regulated”. (Passenger ferry)

2. Lead the Team by example

The leaders should be seen to be pulling their weight as part of a team, and should be seen to be practicing what they preach. This is crucial in developing a sense of shared commitment and values which are vital for effective leadership.

“They must themselves follow the rules; they cannot expect others to follow if they do not do this themselves.” (Dry cargo)

3. Draw on knowledge and experience

The leader should know the ship and crew well, and be able to draw on their own experience to make sound decisions and act appropriately during both normal running and in the event of an emergency. This is perhaps particularly important in the context of the ship environment, which is isolated from others whose experience could otherwise be drawn upon.

4. Remain calm in a crisis

The ability to remain professional, calm and in control in the event of an emergency is critically important. As a situation moves from normal to an emergency, the leader needs to be able to take more of a dictatorial role.

5. Practice ‘Tough empathy’

‘Tough empathy’; is best described as the ability to give people what they need, not what they want. Empathy is the capacity to put yourself in another’s place; it requires the cultivation and use of listening skills. ‘Tough’ empathy balances respect for the individual with the task at hand and real life constraints. One way of describing it is ‘caring with detachment’. Those who demonstrate tough empathy are showing that they genuinely care about other’s needs.

6. Be sensitive to different cultures

Good leaders should regard all members of the crew as equal. Effective leadership will successfully gain the most value from each member of crew and nurture a positive team dynamic that spans any cultural differences.

7. Recognise the crew’s limitations

The leaders should understand how operational and other demands can be realistically delivered according to the capabilities of their crew. This includes understanding the experience of the crew, the need for rest periods, and ensuring that the crew is asked to perform according to its responsibilities.

8. Motivate and create a sense of community

Motivation comes from receiving a return from effort made, for example, in the form of job satisfaction. For example, a leader can motivate crew through involving them in all aspects of management, feedback and appreciation of their effort.

Sharing the work, being visible, showing concern for the crew’s anxieties and caring for those who have problems, will all help build a sense of community and create trust in the leader.

9. Place the safety of passengers and crew above everything

The leader needs to be constantly balancing the relative priorities associated with the normal running of the ship, but should always consider the safety of those on board the highest priority.

10. Communicate and listen clearly

The ability to effectively communicate at all levels is vitally important in providing effective leadership to the crew. Two-way communication, being approachable and having an “open door” policy makes for good crew relations and helps to instill respect, balancing authority with approachability (see above).

“A Captain needs to be more approachable than historically he was. He needs to be relatively the same as others and not put himself on a pedestal. He needs a balance of being known by the crew but distant at the same time.”

“Communication needs to be spot on which means that you never hide things.”

“People will only believe in you and follow you if you talk to them and show them why things must be done that way.”

The leader should be able to listen to their crew without fearing loss of authority, admit errors quickly and be receptive to criticism:

“A good captain has to be prepared to ask stupid things: It’s still a two-way learning process – you don’t know everything just because you’re a captain”.

They should be prepared to let go of what is familiar to them, and be open to moving into new ideas and practices (interestingly, having extensive knowledge and experience can itself be a barrier to this). Good leaders see change as an opportunity rather than a threat.

2. Analysis

In this section, we examine the 10 leadership qualities described in Section 1 above, and for each review the following:

- **Why important:** illustrates the implications for the crew, ship and shore, and where appropriate makes reference to the barriers to effective leadership raised in Chapter II.
- **Gap:** illustrates graphically the extent of the gap between what is desirable, and what is currently being delivered:
 - **Red** = extensive gap. Significant improvements required to ensure that the leadership quality is delivered both more widely and with greater rigour.
 - **Yellow** = moderate gap. Some improvements required to ensure that the leadership quality is more consistently delivered.
 - **Green** = small gap. The quality is generally present among most leaders, although some work could be done to improve.
- **Key issues for development:** considers how to address the gap between the desired and current situation, according to the findings in Chapter II.

The detailed analysis is shown in [Figure 4](#).

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Summary

In summary, most of the gaps between what is currently being achieved, and what is desirable for effective leadership can most effectively be addressed through two main initiatives:

- Improved modular training aimed at all grades up to and including Master. Based on the shortfalls identified in the research we conclude that modules should include team working, decision-making, management skills, cultural awareness, coaching and mentoring, human limitations and effective communication. This research shows that commitment to training is currently variable and often suffers from financial cuts, so it would be necessary to make the training compulsory and linked with certification requirements/promotion criteria (see Chapter II, Section 5 ‘Competence Management’).
- Improved sharing of knowledge through the industry in accidents, near misses, examples of good and poor management practices and the costs of safety loss, to help gain commitment from decision makers (see Chapter II, Section 4 ‘Industry Leadership’).






It is important to recognise that improving the qualities of the Master himself will help to address only some of the barriers to effective leadership identified in this study. As discussed in Chapter II, there are many other key roles that play a crucial part in the leadership of safety:




- The senior shore-based management of companies
- Organisations such as IMO, MAIB, MCA
- Flag states
- Port states
- Underwriters

It must also be recognised that many of the barriers to effective safety leadership lie outside any shortfalls in the actual *qualities* of the leader, and are related more to industry organisational issues, financial constraints and difficulties in legislating an international industry (hence problems with implementation).

Figure 4: Analysis of Leadership Qualities

Quality	Why important	Gap	Key issues for development
1. Instil respect and command	<p>Encourages commitment among the crew that will generate loyalty</p> <p>Master needs to be seen to be able to act according to authority</p> <p>The consequent desire to follow commands will encourage the crew to follow procedures and practices – (prevent 'cutting corners')</p>	●	<p>Cannot be regarded in isolation - linked to all other qualities below</p> <p>Generally, the Master must be empowered to act according to his authority, <i>supported</i> by shore based management</p> <p>Creating shared values (see issue 2) will mean that the crew trust the decision made by the Master even if on the surface they are not popular</p> <p>Training modules could include decision making and problem solving case studies and teaching</p>
2. Lead the team by example	<p>Particular challenge in a fluid labour market where crew turnover maybe high</p> <p>Crew more likely to follow approved practice</p> <p>Crew gain confidence in the leader's ability to make decisions (reduce likelihood of non-compliances and cutting corners) (see Chapter II)</p>	●	<p>Traditionally, many Masters may not have regarded themselves as team players but rather having unquestionable authority. Modern training including practical exercises in team working could help</p> <p>The Master should create a sense of shared values through leading by example</p>

Quality	Why important	Gap	Key issues for development
3. Draw on knowledge and experience	Technical competence vital for ship operation Encourages loyalty and respect		Most Masters are highly experienced as promotion has been historically based on seniority and technical skill Sharing lessons learned through both company and industry (e.g. MAIB) channels could help good practice and knowledge be better disseminated
4. Remain calm in a crisis	People look for strong leadership during a crisis and rely more on their leaders than they would ordinarily. A calm focussed leader is needed to control a panicking crew. This is especially important where foreign crew may panic in their own language (see Chapter II)		The confidence of the Master to respond confidently in an emergency will be strongly influenced by his belief in the crew's abilities (including language skill) Absenteeism from training and emergency drills must not be tolerated
5. Practice 'Tough empathy'	Keeps a focus on what is important Encourages loyalty and respect		Currently, the ability to provide 'tough empathy' will be mainly down to the personality characteristics of the individual Management skills could be improved through dedicated management training linked with certificate requirements
6. Be sensitive to different cultures	Multi-national crews are common Helps to prevent formation of cultural or social divisions in crew Encourages effective team work		In resourcing multinational crews, consideration should be given to careful mixing to avoid formation of dominant groups who exclude themselves from the rest of the crew The Master needs to insist that language policy is strictly maintained, and ensure that crew members are provided with equal opportunities within their roles Training modules could include cultural awareness modules to help counter any preconceptions
7. Recognise the crew's limitations	Able to judge what the crew's limits are to avoid fatigue and low morale (see Chapter II)		Management skills could be improved through dedicated management training linked with certificate requirements. Modules could include training in human limitations A challenge for the Master is exercising sensitivity to crew fatigue and long hours where crew numbers have been reduced to a bare minimum Companies need to ensure that realistic crew sizes are made available

Quality	Why important	Gap	Key issues for development
8. Motivate and create a sense of community	If the crew feel valued and morale is high the quality of work and commitment to safety will benefit.		Management skills could be improved through dedicated management training linked with certificate requirements. Modules could include coaching and mentoring, appraisal, teamwork and personal development plans
9. Place the safety of passengers and crew above everything	Means that operational pressures will not jeopardise safety (see Chapter II)		Needs to be led from the very top "nothing we do is worth getting hurt for" Master must feel empowered to act according to this authority (may mean anchoring up to provide rest, or deciding not to sail despite operational pressures)
10. Communicate and listen clearly	Crew understand the Master's vision Builds trusting and open environment Show that it is okay to ask for help and open communication without fear of punishment (helps prevent a 'blame culture') Being open to criticism allows safer practices to develop, encourages team work and helps to create trust and shared values		Current training and certificates do not place emphasis on the abilities of the Master to clearly communicate meaning that communications skills are currently highly variable between individuals Increase the emphasis on communication abilities through training and linking these skills to certificate requirements Traditionally, the actions taken by the Master would not be open to challenge Regular safety tours and informal discussions with all levels of the crew could help to promote a more modern management style whilst maintaining the Master's authority

IV. Conclusions

Based on the programme of work described in Chapter I, the study makes the following overall conclusions:

1. **Ten core leadership qualities** have been identified for effective safety leadership. These qualities are primarily geared towards the Master as a key leader for safety, but are also appropriate for ranks below the Master.
2. There are perceived **gaps** between the desirable leadership qualities, and what is currently being delivered. These primarily concern:
 - Clear two-way communication
 - “Tough empathy”
 - Openness to criticism
 - Empathy towards different cultures
 - Ability to create motivation and a sense of community
 - Knowing the crew’s limitations
 - Being a team player
3. However, there are other important **explicit barriers** to effective safety leadership that relate to the current structure of the industry, standards, practices and economic pressures. These barriers would need to be addressed irrespective of the personal qualities and skills of the Master. Key issues include:
 - A perceived **undermining of the Master’s role** due to increased management from the shore with an associated increase in communications
 - **Financial constraints** that lead to, for example, shortfalls in the provision of training and reduced crew sizes
 - **Increased paperwork** as companies respond to legislation and increased numbers of inspections and audits. Combined with reduced crew sizes this leads to less time to actually work and increased fatigue
 - Shortfalls in **implementation of standards** and conventions including the ISM Code
 - Lack of enforcement in **implementing the recommendations of MAIB** reports and more generally in the sharing of information across the industry
 - Increased usage of **multinational crews**, which without effective training and careful management creates additional leadership challenge
 - A **low industry profile** and difficulties in retaining skilled staff who would be the leaders of tomorrow
 - Limited **effectiveness of ISM audits** and statutory surveys

Enabling factors to address these barriers are incorporated into the recommendations below.

4. The extent of **good safety leadership** (and more broadly good safety management arrangements) appears to be **highly variable** across companies. Safety management arrangements are generally most highly developed in the tanker sector, and least highly developed in the dry cargo sector. However, our research confirms that good safety performance can be achieved with a **committed leader** who has the key qualities described above, without necessarily having the most sophisticated management arrangements.
5. **The ISM Code** is well regarded as a key driver for improved safety leadership, but is perceived to have had a **limited influence through poor implementation** in companies without developed management systems.

V. Recommendations

Based on the results of the research we have developed the following recommendations.

Each recommendation is provided with a cross-reference to the relevant parts of the analysis, and a series of suggested actions for implementation. In many cases there is a number of possible ways to proceed. Implementation of these recommendations will in some cases require engagement of a number of parties within the industry as well as MCA.

Recommendation	Ref Analysis
<p>R1 Introduce new skills training modules in Effective Leadership and People Management as standard practice for Masters and Officers across all sections of the maritime industry. This should also extend to shore-based managers. Modules should be general in nature (i.e. not safety-specific), but should include safety issues and examples as an integrated part of each topic. Training should be highly interactive and case study driven. As a starting point we consider that the training should include the following topics (refer to Part 3 for rationale)</p> <ul style="list-style-type: none"> • Personalising the leadership role • Communication • Understanding different cultures • Motivational skills • Understanding and empathising with your team • Team working • Dealing with conflicts • Coping with a crisis • Decision-making • Coaching, mentoring and appraisal • Authority, discipline and blame 	<p>II.5 Competence Management</p>
<p>Suggested Actions</p> <ol style="list-style-type: none"> 1. Review existing (extensive) Leadership and People Management training offerings provided to industry, e.g. in offshore, chemicals, rail, aviation, nuclear sectors. Adapt these to provide tailored modules for the maritime sector. 2. Introduce these modules as an integral part of the certification structure for Masters and Officers. 3. Use the 10 core qualities identified in this research as the starting point for structuring the Leadership module. 4. Use the Safety Leadership Guidance pack as a complementary reference document for Leadership and People Management training (see also R10). 	

Recommendation		Ref Analysis
R2	Encourage the industry to give a stronger commitment to demonstration of leadership and people management skills (including safety leadership) in formal performance appraisal for promotion into senior leadership positions, both shore- and ship-based. This should include development and integration of suitable appraisal criteria	II.5 Competence Management
Suggested Actions <ol style="list-style-type: none"> 1. Develop illustrative guidance on suitable criteria that could be used for performance appraisal – the 10 core qualities are a useful starting point. 2. Promote, as part of the appraisal guidance, the use of “360 degree” appraisal methods for Masters, in which Officers are asked to provide feedback on the Master as part of the process. 3. Consider the feasibility of specifying the use of suitable leadership appraisal criteria as part of the ISM Code. 		

Recommendation		Ref Analysis
R3	<p>MCA should review the current ISM audit process and methodology to improve its effectiveness in driving forward good safety leadership practice and ensuring better implementation of the principles of the ISM Code. The review should consider at least the following aspects of the audit process for both MCA’s own formal audits and internal audits conducted by operators:</p> <p>Level of prescription: ensure that checklists and protocols are used only as a support to the auditor, and do not over-prescribe requirements for compliance</p> <p>Training of auditors: ensure that auditors are adequately trained in management theory such that they can properly identify root-causes and assess management processes on their own merits in an investigative way, rather than focusing heavily on code compliance and paper-trails</p> <p>Process and approach: ensure that the audit process emphasises frequent and informal communication with the auditee, and includes best-practice sharing as a key feature</p> <p>Timing: consider introducing an element of unannounced “surprise” audits</p>	II.6 Standards and Implementation
Suggested Actions <ol style="list-style-type: none"> 1. Review and adapt ISM audit procedures as indicated above (note that we have not conducted a detailed evaluation of the audit process as part of this project). 2. Ensure that input is obtained also from auditors and operators on possible improvements. 		

Recommendation		Ref Analysis
R4	MCA should consider encouragement of more widespread use of confidential reporting systems (such as CHIRP and MARS) in order to capture near-misses more comprehensively and disseminate information more broadly across the industry	II.5 Standards and Implementation
Suggested Actions <ol style="list-style-type: none"> 1. Consider building on experience from other sectors, such as rail, in implementing confidential reporting systems on a broader scale. 		

Recommendation	Ref Analysis
<p>R5 The MCA should take steps to encourage and facilitate better participation by Industry Leaders in the drive to improve Safety Culture in shipping. This might in part be achieved through their presence at IMO and by encouraging more active dissemination and exchange of information across the industry. Much valuable data is produced by Industry leaders such as the MAIB, Port State Memoranda of Understanding countries and underwriters, which might be more widely circulated</p>	<p>II.4 Industry Structure and Leadership</p>
<p>Suggested Actions</p> <ol style="list-style-type: none"> 1. With respect to any recommendations which may be made by the MAIB after an accident investigation we suggest that: <ol style="list-style-type: none"> (i) The MCA should follow up these during ISM audits, in order to check whether they have in fact been implemented (ii) The MAIB should themselves follow up these points by checking not only with the operators, but also with others who may be concerned, such as Classification Societies and Underwriters 2. The MCA should continue to offer more visible support to the efforts of the IMO to encourage Flag State Implementation (of maritime conventions). The introduction of the model Audit Scheme to audit Flag States is a positive step. 3. Port State (e.g. Paris Memorandum) Annual Reports should be more readily accessible throughout the shipping world, including seafarers. Seafarers should also be encouraged to examine websites such as EQUASIS. 4. Underwriters, particularly P&I Clubs, produce much valuable accident analysis as well as loss prevention material. The MCA should encourage P&I Clubs to make this material (albeit generic) more widely available. 5. Possibly consideration could be given to the establishment of an Industry Forum (perhaps electronic) for the benefit of Red Ensign ship operators, where matters of mutual interest and concern could be discussed and where ideas, proposals and solutions debated. 	

Recommendation	Ref Analysis
<p>R6 MCA should proactively encourage good practice in communications and allocation of responsibilities across the ship-shore interface between Masters and Shore Managers. It is recommended that the following good practices, already in existence in some parts of the industry, are implemented more broadly:</p> <ul style="list-style-type: none"> • Rotation of ship and shore staff (e.g. Masters and Officers spending a period onshore and vice-versa) • Periodic ship-shore meetings at which safety issues (amongst others) can be openly discussed • Programme of regular ship visits by shore-based staff • Clearly-bounded and defined responsibilities and authorities for the Master to take decisions on key safety and other issues – avoiding the risk of dilution of responsibility resulting from excessive need to contact the shore for permissions and notifications 	<p>II.2 Ship-Shore Interface</p>

Suggested Actions

1. Incorporate these good-practices into the Leadership Guidance Pack.
2. Consider the extent to which the principles behind these good-practices could be enforced through regulation.

Recommendation		Ref Analysis
R7	Encourage the industry to take proactive steps to improve staff retention , to avoid crucial loss of experience and knowledge (including safety experience and knowledge) in those who go on to hold senior or leadership positions. Key issues include profile-raising, incentivisation and career development	II.4 Industry Structure and Leadership
Suggested Actions <ol style="list-style-type: none"> 1. Collaborate with other key industry stakeholders to develop and implement a programme of positive profile raising with recruitment agencies and the media. 2. Consider the feasibility of forms of incentivisation that could be adopted to retain newly qualified cadets. 		

Recommendation		Ref Analysis
R8	Promote and encourage the industry to drive towards reduction of bureaucracy and paperwork, and simplification of procedures . This should be linked to a complementary drive to promote a “zero-tolerance” approach to violations of procedures . In the safety context, this recommendation would be aimed at addressing problems in some parts of the industry with corner-cutting and the “cover your backside” mentality, exacerbated by cost and time pressures.	II.3 Resources and Costs II.6 Standards and Implementation
Suggested Actions <ol style="list-style-type: none"> 1. MCA could perhaps best initiate this through setting an example – implementing a programme to cut down bureaucracy and red-tape in its own internal processes, procedures and organisation. 2. Involve Masters, Officers and crews in team-based reviews of current rules and procedures, aimed at improving practicality and simplifying and removing unnecessary items. Consider setting a quantitative target for reduction in numbers of procedures. 3. Recommend to the industry an email reduction programme. There are examples of such programmes that have been adopted in other industries. 4. Include the principles of zero-tolerance – supported by a “just” progressive discipline framework – into training modules for leaders (ref R1 above). 		

Recommendation		Ref Analysis
R9	MCA should consider means to improve enforcement of working hours regulations by ship operators, this being a primary safety risk area and an issue which may place significant pressure on Masters to compromise. Whilst it is easy to recommend that checks and inspections should be increased, this is clearly difficult to achieve in practice. It is beyond the scope of this study to investigate fully all the options for implementation.	II.3 Resources and Costs
Suggested Actions 1. MCA should identify, characterise and cost options for improving enforcement. We are not able to say from the research whether improvement is easily achievable in practice.		

Recommendation		Ref Analysis
R10	The Leadership Pack on safety leadership should be kept concise to avoid being regarded as yet more paperwork.	II.5 Competence Management
Suggested Actions 1. Subject to satisfactory approval and completion of the Leadership Pack, MCA should implement an industry roll-out programme. The programme should emphasise the thrust of the foregoing recommendations including: <ul style="list-style-type: none"> • Recognition of the significance of current structural barriers and prevailing circumstances which have an impact on safety leadership • The need to simplify bureaucracy and red-tape • The need for Masters to strengthen the “people” side of their roles as leaders. 		

Appendices

Appendix A: Literature Review

This appendix provides information from a review of literature relevant to safety leadership.

The following table lists the literature identified as relevant to the study. The review of each of these articles and reports is summarised in the tables that follow.

Literature Title	Author/Source	Ref. Number
The Human Factor, A Report on Manning	UK P&I Club	001
Analysis of major Claims: Ten-Year trends in Maritime Risk	UK P&I Club	002
Leadership Training: Strategy for the Industry	Captain Terry Hunter, Chairman, West of Scotland Branch: Seaways	003
Safety Culture	International Shipping Federation	004
The Role of Leadership in Improving the Quality and Safety of Shipboard Operations	Fernando Z. Cavaco, University of Lusofona	005
Breaking Point	Fairplay International Shipping Weekly	006
Take me to your leaders	Fairplay International Shipping Weekly	007
A precarious safety culture: systems work, but humans fail	Fairplay International Shipping Weekly	008
What is a leader? Management skills are needed onboard	Fairplay International Shipping Weekly	009
Training: no answer to officer shortage	Fairplay International Shipping Weekly	010
Paris MOU Annual Report 2002	Paris Memorandum of Understanding on Port State Control	011
Ships, Slaves and Competition	ICONS	012
Alert: the International Human Element Bulletin, issue 2	The Nautical Institute	013
Development of A Leadership Resource Pack	Health and Safety Executive	014
Bridge Procedures Guide	International Chamber of Shipping	015
Code of Good Management Practices in Safe Ship Operations	International Chamber of Shipping/Shipping Federation	016
Safety Aspects of ship design & technology	House of Lords Select Committee (Carver)	017
Safer ships, cleaner seas	Lord Donaldson, HMSO	018
Guidelines on the application of the IMO ISM Code	International Chamber of Shipping/Shipping Federation	019
Guidelines on the application of the STCW Convention (1995)	ICS/ISF	020
Health and Safety Executive Guidance Note 48	HSE	021
Cracking the Code	Phil Anderson, The Nautical Institute	022

Literature Review

Reference Number	001
Title	The Human Factor, A Report on Manning
Author	UK P&I Club
Source	UK P&I Club
Document type	Paper
Date	Unknown
Key Words	Language barriers, experienced sea-farers, training
Abstract	<p>This report explores the importance of the human element in the UK P&I Club in terms of the following factors:</p> <ul style="list-style-type: none"> • Manning • Directly and indirectly managed ships • Service and experience • Training and endorsements • Language and nationality <p>The report identifies the following enablers to effective safety leadership:</p> <ul style="list-style-type: none"> • 97% of UK P&I Club's ships had active Management Policies in place. Such policies can be seen as an indication as to whether each management system accepts and actively responds to the responsibilities for safety and operational standards. This in turn can be taken as some indication of crew efficiency and morale • Language barriers can be overcome by adopting a 'working language'. Nearly half of the ships inspected adopted English as their working language • Leading ship managers are recognising the prediction for a shortage of qualified sea-farers by the turn of the next century, and are developing training programmes and building up a pool of permanent employee officers accordingly <p>The report identifies the following potential barriers to effective safety leadership:</p> <ul style="list-style-type: none"> • The decline in the number of cadet places in training schools in traditional maritime countries is a matter for serious long-term concern • One quarter of the officers on UK P&I Club ships have no handover period at all, and the majority get a week or less • In the industry in general the importance of training is widely acknowledged, yet in difficult times it is often first to fall under the economic knife • In terms of language barriers, it is common for people to 'panic in their own language' in a crisis <p>In addition, no significant trends were found in the following:</p> <ul style="list-style-type: none"> • There is no evidence to support the fact that ships with cheap foreign crews are necessarily safety poor ships • There is no evidence that indirect management creates crews with poor attitudes towards safety

	<ul style="list-style-type: none">• There is no evidence of over-rapid promotion or of the serious dilution of qualifications or of experience
Industry	Maritime
Lessons learnt	Cheap foreign crews are not necessarily safety poor – this contradicts the interview findings

Literature Review

Reference Number	002
Title	Analysis of major Claims: Ten-Year trends in Maritime Risk
Author	UK P&I Club
Source	UK P&I Club
Document type	Paper
Date	Unknown
Key Words	Language, fatigue, corner cutting
Abstract	<p>This report examines ten years of the UK P&I Club's data in order to identify overall trends in major claims. One trend examined is that of human error, which has the following causal factors:</p> <ul style="list-style-type: none"> • Language problems in mixed nationality ships • Fatigue (especially with smaller crews and shorter turn around times) • Minor slips in making mathematical calculations • Pride whereby there is a tendency for crew to carry out, single-handedly, tasks which require some assistance from another person • Commercial pressures, leading to calculated risk taking <p>The report identifies the following trends in relation to human error:</p> <ul style="list-style-type: none"> • Human error accounts for 58% of all major claims • The largest proportion of human errors are attributable to personnel on the bridge, with the ship safety being jeopardised by the activities of pilots for whom the ship owners generally remain responsible. Pilot error costs about US\$16m per year. • The majority of crew error claims involve personal injuries to the crew members themselves. The overall trend is one of sustained improvement, with the exception of hand deck officers, who have increasing demands placed upon them
Industry	Maritime
Lessons learnt	None

Literature Review

Reference Number	003
Title	Leadership Training: Strategy for the Industry
Author	Captain Terry Hunter, Chairman, West of Scotland Branch
Source	Seaways
Document type	Paper
Date	April 2004
Key Words	Management training
Abstract	<p>This paper presents the findings of an international survey conducted by the Working Group, which is an inter-disciplinary mix of maritime industries. The survey aimed to establish whether officers in commercial shipping had received any leadership training in their careers, in what format it had been received, and how they would improve such training in the future. The survey received 537 replies, and the key findings are summarised below:</p> <p>Enablers to effective safety leadership:</p> <ul style="list-style-type: none"> • 54% of respondents had been introduced to leadership and/or maritime techniques, including shore-based training, STCW Chapter VI short courses, on-board activities (e.g. safety drills), and outward bound courses at cadet level <p>Potential barriers to effective safety leadership:</p> <ul style="list-style-type: none"> • Only 22% of the respondents had received management training outside their maritime training, which typically took the form of voluntary activities • 90% of respondents recognised a need for leadership and management training • The majority of respondents (46%) thought that this need was not adequately addressed in current training • 86% of respondents believed that management training should be a requirement for promotion to senior rank for the following reasons: it is currently left to chance; there is a need for good leadership especially in emergency situations; modern leadership ideas are passed by; poor leadership leads to poor morale and under-performance; training is required to change the attitudes of some personnel; there is a need for training to manage foreign crews; the older generation resist new ideas and dismiss the modern view of younger crew; some leaders find it difficult to listen and take criticism; people fall in autocratic styles that result in poor communication and teamwork <p>Proposed solutions to effective safety leadership:</p> <ul style="list-style-type: none"> • In terms of how such training should be provided, the majority favoured short courses, with a significant vote for the land-based approach and accreditation for international recognition. Ideally courses would be at three levels during the employee's career (cadet, OOW, and management), but they should be applied at equivalent levels for shore staff • Industry must focus on the qualities of leadership it needs to promote to apply leadership training, and it should identify and train leaders early on

	<ul style="list-style-type: none"> The following proposed topics should be included in the training, all with different levels of importance for different levels of career progression: appraisal; cultural awareness; personality versus behaviour; human limitations; effective communication; teamwork; decision-making/problem solving; crisis management; personal development plan; coaching and mentoring
Industry	Maritime
Lessons learnt	The extent of the lack of management training

Literature Review

Reference Number	004
Title	Safety Culture
Author	International Shipping Federation
Source	ISF
Document type	Paper
Date	Unknown
Key Words	Safety culture, ISM
Abstract	<p>The paper stresses the importance of a good safety culture. Losses in the industry have decreased over the last decade, and this is not due only to technological development, but also increased safety awareness in management and employees.</p> <p>The paper cites commitment from the top as being one of three key ingredients of a good safety culture. The paper argues that commitment from the top requires decision makers to understand the true costs of accidents. There may be an aversion to spending on loss prevention as the losses are seen to be covered by insurance.</p> <p>Another of the key aspects for safety culture is changing behaviour.</p> <p>The paper talks about the ISM Code and its role in achieving safety culture. It argues that a total safety culture goes beyond the ISM Code since it needs to maximise the benefits and cost savings that can be derived from the systems which ISM requires companies to have.</p> <p>It recognises that the ISM Code's underlying principle is to move shipping away from an unthinking compliance to a culture of thinking about safety.</p>
Industry	Maritime
Lessons learnt	None

Literature Review

Reference Number	005
Title	The Role of Leadership in Improving the Quality and Safety of Shipboard Operations
Author	Fernando Z. Cavaco, University of Lusofona
Source	University of Lusofona
Document type	Paper
Date	May 2002
Key Words	Leadership, morale, communications, loneliness, motivation, authority, support
Abstract	<p>The paper looks at the variables influencing job satisfaction, productivity and safety in shipboard operations. Leadership is also looked at as a variable. The paper argues that a lack of social support from the leader causes job dissatisfaction, emotional deprivation and stress.</p> <p>Poor communications are argued to be a root cause of problems</p> <p>(1) Lack of ability on the part of the leader which creates a lack of motivation and leads to accidents</p> <p>(2) Poor communications to shore based managers</p> <p>The paper argues that poor leadership stems from the shore, and argues for a complete organisational restructuring. The focus, the paper argues, needs to include interpersonal as well as technical based skills in leaders.</p> <p>The paper introduces a history to leadership in the industry describing the change from a much more command style leadership of the past.</p> <p>Some of the challenges in leadership in the industry include:</p> <ol style="list-style-type: none"> 1. Transient workforce. 2. Leadership relegated to second place as economic survival is prime. 3. Reduction in crew sizes for economic reasons and on technically advanced ships. 4. Reduction in loyalty of captains to the ship and crews. 5. Difficulty in communication with international crews (both on the ship and extending to shore). <p>The paper describes a study of a Portuguese oil tanker over one month including a look at the ship company's dynamics. Some of the key conclusions of the study are:</p> <ol style="list-style-type: none"> 1. The seafarer goes to sea to escape for psychological or economic reasons or as part of a long-standing cultural tradition. 2. Instead of escaping problems – the seafarer finds that his problems are reinforced and he is unable to socially integrate. 3. Leads to loneliness and isolation. 4. Depending on personality type – some are able to suppress feelings better than the colleagues and become natural leaders – others cannot. The study found that such qualities rarely existed in the formal leaders as they were chosen for seniority based on technical experience rather than leadership/personality.

	<ol style="list-style-type: none"> 5. Questionnaires showed that crew perceived that leaders were perceived to be authoritative regarding rules and procedures and work assignments, but in social support that leadership support is lacking. Two different groups emerged – Officers, Petty Officers and Stewards in one group – felt that social support was strong, and work assignments and rules and procedures were not lead with lots of authority. The reverse was true for the other group comprising engine and deck ratings. 6. The simple fact of being aboard has a negative effect on the crews overall job satisfaction and that problems can only be overcome if the leader is clear and supportive. 7. Money is perceived to be the only source of compensation for the stress of being away from home. 8. Where the leader is seen as authoritative, the crew feel more insecure and seek to form relationships with their peers. 9. Physical and psychological fatigue is more a function of an inadequate work structure than an excessive workload. 10. Leadership fails to stimulate therefore people have a low opinion of themselves and their colleagues. Therefore they work harder to compensate for the feeling of isolation (which is good for the company).
Industry	
Lessons learnt	<p>Suggest we need to explore the following areas in questioning:</p> <ol style="list-style-type: none"> 1. Reduction in the number of people on board – how has this affected leadership? 2. Do the socialistic differences between the crew (who are uneducated) and officers cause difficulties (particularly with fewer secondary officers on board)? 3. Explore with sharp end crew how supportive leader is of personal issues/morale etc.

Literature Review

Reference Number	006
Title	Breaking Point
Author	Fairplay International Shipping Weekly
Source	Fairplay
Document type	Paper
Date	18 December 2003
Key Words	Ship-shore divorce, over-regulation, experience, industry profile
Abstract	<p>This paper examines the changes in the shipping industry over the years, and concludes that regulations have been tightened to the extent that 'the life is being squeezed out of shipping'. The paper notes the following major changes:</p> <ol style="list-style-type: none"> 1. Over-regulation: the maritime industry has lost touch with the ships and their crews, 'romance is dead, long live regulation.' 2. The profile of the industry: those now involved have little experience of life at sea, its dangers, hardships or rewards. Ships have become a moneymaking commodity. Ships only hit the headlines when there is a problem, and then only briefly. 3. Ownership: before the 1970s the countries that built the ships were responsible for ownership, regulation, servicing, crewing and training. Now it is more indirect. 4. Ship-shore link: traditionally after a career at sea skilled mariners progressed to shore careers, but with the drive to cut costs due to the oil crisis in the 1970s there came a search for crews from developing countries, and the rise of the flags of convenience meant there was little direct control on crew training and supervision. This has meant the link between ship and shore has loosened. There is now higher turnover, increased training costs, less experience and stability in management, and a loss of corporate knowledge. <p>The paper goes on to stress that finding a way to re-attach the link is fundamental to the future health of the shipping industry. It recommends a greater emphasis on manning, training and development of a safety culture.</p>
Industry	Maritime
Lessons learnt	Root cause of the ship-shore divorce issue

Literature Review

Reference Number	007
Title	Take me to your leaders
Author	Fairplay International Shipping Weekly
Source	Fairplay
Document type	Paper
Date	15 May 2003
Key Words	Leadership skills
Abstract	<p>This article examines what leadership is about in the maritime industry, and recognises the following barriers to effective safety leadership:</p> <ul style="list-style-type: none"> • Senior officers onboard and leaders ashore lack leadership training • The industry is aware of the human element, but it is less understood that the style of leadership, or lack of it, may be a contributory factor in many cases • The role of a maritime leader is becoming more demanding with multi-cultural crews to manage • Being a team-player is difficult in a fluid labour market where crew turnover is high • Leadership is in short supply due to the 'economic dumbing down of the industry's manning pre-requisites so as to access cheap labour sources around the globe' <p>The article goes on to identify the following solutions to a decline in leadership standards:</p> <ul style="list-style-type: none"> • The three elements required to produce a successful leader are: team-building skills, leadership and education • The industry need to understand the cost of accidents in order to justify a training budget
Industry	Maritime
Lessons learnt	None

Literature Review

Reference Number	008
Title	A precarious safety culture: systems work, but humans fail
Author	Fairplay International Shipping Weekly
Source	Fairplay
Document type	Paper
Date	21 Feb 2002
Key Words	Regulation compliance
Abstract	<p>This article explores the compliance of the maritime industry with standards, and identifies root causes for non-compliance, and what should be done to overcome this. The International Commission on Shipping (ICONS) estimates that about 10% of operators are ignoring the global push on maritime safety.</p> <p>Barriers to compliance:</p> <ul style="list-style-type: none"> • Reasons for non-compliance include: corner-cutting and time saving measures to meet commercial pressures, language problems in mixed crews, incompetent crews, lethargy, social stresses, complacency • There is a blind faith in the industry that nothing will go wrong, with a lack of commitment to safety culture coming from the top • There is no-one to police in the middle of the oceans, and assessing competence during a snap-shot port visit is difficult • Some owners resort to manipulating the rules as they find it cheaper to pay the penalties of non-compliance than to operate to prescribed standards <p>Potential solutions to compliance:</p> <ul style="list-style-type: none"> • Pressure should be placed on statutory marketing authorities to ensure the vessels they charter have appropriate safety practices • In the bulk carrier industry a holistic approach is needed with the 'chain of responsibility' being extended to put more pressure on charterers, consumers and the press
Industry	Maritime
Lessons learnt	Non-compliance can be a money-saving incentive

Literature Review

Reference Number	009
Title	What is a leader? Management skills are needed onboard
Author	Fairplay International Shipping Weekly
Source	Fairplay
Document type	Paper
Date	15 May 2003
Key Words	Leadership skills, training
Abstract	<p>The article explores different types of leader that can be found in the maritime industry, and tries to identify the reasons for such leadership characteristics. Three key types of leader are discussed, with the positives and negatives for each in turn:</p> <ol style="list-style-type: none"> 1. The autocrat: this leader dominates discussion to get his way and get the job done. Positive: deadlines are met. Negative: they may not get the best out of their colleagues. 2. The 'laissez-faire' manager: this leader has a 'hands-off' approach, leaving his staff to do their own thing. Positives: it can work well with a highly motivated team who gain a sense of ownerships from their own tasks. Negative: with an unorganised and unmotivated team there will be no direction. 3. The democrat: this leader will consult staff before making decisions. Positive: they fuel discussion and staff can contribute. Negative: a democratic leader can be seen as uncertain and lacking knowledge. <p>A leader's behaviour can be influenced by many factors including:</p> <ul style="list-style-type: none"> • How they were treated as their career progressed • Their background • Their education and training • The culture of their organisation • The structure of their business <p>It is concluded that whatever the manager type, management training to develop skills in coaching, communication, staff-motivation, decision-making and leadership will deliver good results.</p>
Industry	Maritime
Lessons learnt	None

Literature Review

Reference Number	010
Title	Training: no answer to officer shortage
Author	Fairplay International Shipping Weekly
Source	Fairplay
Document type	Paper
Date	28 June 2001
Key Words	Leadership skills, training
Abstract	<p>This article examines the shortfall in the maritime labour market. A survey by Bimco and International Shipping Federation predicted that by 2010 on vacancy in five in the shipping industry will be unfilled. Several issues are explored:</p> <p>Training retention:</p> <ul style="list-style-type: none"> • There is lots of unused capacity at maritime academies • It takes 8 years to turn a cadet to a master or chief engineer • There is concern about the retention rates of cadets, with drop-out rates in the EU for training being 22% • The article stresses the importance of recruiting crew who fit into the business culture of the company rather than focussing on their qualifications and competence alone <p>Cheap labour:</p> <ul style="list-style-type: none"> • Cheap crews may be cheap in the short term but the market is changing and least direct cost is not necessarily the best option • The need for quality payback is becoming more evident <p>Finance:</p> <ul style="list-style-type: none"> • Wage increases over the next 10 years are likely to remain moderate, but legal costs and sickness costs are growing • More money is needed for training to lift the image of the industry on the labour market
Industry	Maritime
Lessons learnt	The extent of training drop-out, the long-term dangers of hiring cheap crews in terms of cost

Literature Review

Reference Number	011
Title	Paris MOU Annual Report 2002
Author	Paris Memorandum of Understanding on Port State Control
Source	www.parismou.org
Document type	Report
Date	2002
Key Words	ISM, implementation, standards
Abstract	<p>The role of the Paris Memorandum of Understanding of Port State Control is to investigate the improvement of operational, technical and administrative port State control procedures. The annual report summarises findings and actions. Noteworthy findings are summarised below:</p> <p>Crew certification</p> <ul style="list-style-type: none"> • Around one third of ships did not comply with new crew certification requirements – during 2 months of checks on 2400 ships inspectors found that on 853 of them at least one of the crew did not have the correct STCW95 certification • As a result the Paris MOU will introduce new banning procedures which could result in ‘three strikes and out’ <p>Working and living conditions:</p> <ul style="list-style-type: none"> • The main categories investigated were ‘crew and accommodation’, ‘food and catering’, ‘working places’ and ‘accident prevention’. Deficiencies in these areas decreased by 12% from 5178 in 2000 to 4548 in 2002 • In July 2003 the International Labour Organisation’s Protocol to ILO147 entered into force, which covers the checking of new requirements for sea-farer’s hours of work and rest <p>ISM non-compliance</p> <ul style="list-style-type: none"> • The average percentage of detention of ships for non-ISM compliance was 4% (163 ships out of 3846) • Offshore vessels show the highest ISM non-compliance level (30% detention rate) and general cargo ships predominated. Bulk carriers, oil tankers and chemical tankers showed improvement since 2001. Passenger ships showed no ISM-related detentions. • 7.4% of general cargo ships were detained because of failings in their management systems alone • Overall 70 flag States did not have their business in order on 1 February 2002: ‘A sorry performance given a 7 years for implementation’ • Although the documentary part of the management system onboard seems to have improved over the past 4 years, the actual implementation by the responsible crew members onboard leaves ample room for improvement <p>Overall ships older than 15 years show 12 times as many non-conformities as ships less than 5 years old.</p>

	<p>The Paris MOU are pursuing various initiatives in order to improve on the current rogue ships that give the shipping industry a bad name:</p> <ul style="list-style-type: none"> • Moving towards a 'zero tolerance' policy • Improving transparency in the industry – e.g. publishing detentions on the website, 'name and shame', 'Rustbucket' publication of serious detentions with serious offences described in detail with photographs and an annual reward for the best contribution • Training of port state control officers to establish a degree of harmonisation and expertise, strongly supported by the maritime industry
Industry	Maritime
Lessons learnt	The extent of non-compliance and measures being employed to reduce this – e.g. the effectiveness of naming and shaming companies. Cost savings to be gained by avoiding international safety requirements equate to 15-16% of the annual operating costs – an incentive for low standards if there ever was one.

Literature Review

Reference Number	012
Title	Ships, Slaves and Competition
Author	ICONS
Source	www.icons.org.au
Document type	Report
Date	March 2001
Key Words	IMO, experience, fatigue
Abstract	<p>The International Commission on Shipping (ICONS) report is a result of a major international inquiry into the state of world shipping, and brands up to 15 per cent of all ocean-going vessels as "slave ships".</p> <p>According to the report, "Seafarers in 10 to 15 per cent of the world's ships work in slave conditions with minimal safety, long hours for little or no pay, starvation diets, rape and beatings." These conditions are flourishing, it claims, in an industry which has much less transparency and public accountability than other transport sectors. The underlying cause of sub-standard shipping is the commercial advantage that a ship owner can gain through avoiding international standards for safety.</p> <p>The Commission urges governments of major labour-supplying nations to take on greater responsibility for their seafarers. They should review their maritime training and ensure its compliance with the relevant international conventions. Moreover they should publicly name and prosecute companies and organisations who blacklist seafarers for criticising their conditions or contacting unions.</p> <p>Governments should review maritime training and labour supply, and introduce legislation to license manning agents and address wages and hours of work.</p> <p>All participants in the shipping industry should promote greater transparency by fully disclosing information to publicly accessible databases, the report says. The industry widely supports such a suggestion. To encourage reporting, Port State control authorities should establish toll free telephone services to enable crew members to confidentially alert port of safety and crew problems. The report recommends that the 'IMO develop a database of all seafarer certificates for open electronic access to assist the elimination of fraudulent certificates of qualification'. Meanwhile it proposes that good quality ship-owners should benefit from a reward system. Responsible owners should promote industry best practice and support the maximum exposure of relevant information on their ships. Overall, clearer responsibility should be shared between the various shipping bodies, through introducing:</p> <ul style="list-style-type: none"> • Tighter port state controls • Stronger supervision by the European Commission of classification societies, which assess the structural integrity of a vessel • Better monitoring of their registries by Flag States • More rigorous inspections in compliance with the ISM Code
Industry	Maritime
Lessons learnt	The extent of poor shipping, and the reasoning behind recommendations

Literature Review

Reference Number	013
Title	Alert: the International Human Element Bulletin, issue 2
Author	The Nautical Institute
Source	www.nautinst.org
Document type	Journal
Date	January 2004
Key Words	Paperwork
Abstract	<p>The journal 'Alert' is a 3-year campaign (starting in 2004) run by the Nautical Institute to raise the awareness of Human Element issues in the commercial maritime industry. Key topics for the journals in January 2004 are summarised below:</p> <p>Paperwork</p> <ul style="list-style-type: none"> • Large volumes of paperwork are being brought about by the requirements of the ISM Code, Port State inspections, vetting inspections and port entry and ship-shore safety checks • Electronic paperwork (e-mail correspondence) is especially prominent, with some Masters spending on average 3-4 hours a day sending and receiving information on e-mail • Checklists are also sidetracking mariners from their primary jobs – 'there is now a checklist to check the checklist' • On a positive note, the use of software programmes can cut down paperwork, but only if they are used wisely and if proper IT training is provided <p>Cracking the ISM Code:</p> <p>A significant section of the maritime industry is struggling to implement the ISM Code because of an inadequately functioning Safety Management System (SMS). Common negative factors expressed are:</p> <ul style="list-style-type: none"> • Too much paperwork • Large volume procedures manuals • Irrelevant procedures • Bought off-the-shelf systems • Ticking boxes in checklists (without actually carrying out the required task) • Not enough people and time to undertake the extra work • Inadequately trained or unmotivated people • No company support • No perceived benefit compared with the input required • ISM is merely a paperwork exercise <p>However, some companies are operating successful SMSs, and therefore implementing ISM well due to the following:</p>

	<ul style="list-style-type: none"> • Leadership and commitment from the very top of the organisation • Paperwork reduced to manageable levels • A sense of ownership by those involved in the SMS process • Continuity of employment of personnel both ashore and onboard the ship • Two way communication between the ship and office • Awareness of the importance of safety
Industry	Maritime
Lessons learnt	Negatives of ISM

Literature Review

Reference Number	014
Title	Development of A Leadership Resource Pack
Author	Health and Safety Executive
Source	HSE Books
Document type	Booklet
Date	2001
Key Words	Leadership, resource pack,
Abstract	<p>The report (prepared by Ernst and Young) was prepared for the Offshore Safety Division. It is aimed at OSD inspectors to help them prepare for discussions with senior managers. It aims to provide good practice and knowledge that demonstrates positive leadership.</p> <p>The document describes a 7-stage leadership commitment model:</p> <ul style="list-style-type: none"> • Business Case • Accountability • Behaviour • Integration • Prioritisation • Monitoring and Measuring • Learning <p>Good practices are listed against each of these stages based on a series of case studies:</p> <ul style="list-style-type: none"> • Amerada Hess • British Airways • Billiton • BP • Dupont • ICI • Fluor Daniel • LASMO • Shell Expro <p>Business Case:</p> <ul style="list-style-type: none"> • Importance of understanding how H&S features on the agenda • Moral obligation • Good practice • Obtain license to operate • Turnball guidance good practice

	<ul style="list-style-type: none"> • Costs associated with loss must be managed <p>Accountability</p> <ul style="list-style-type: none"> • Commitment through dedicated functional heads and/or execs with safety responsibility • Senior committee responsible for setting H&S visions and plans • Senior managers have safety criteria into balanced scorecards – bonus linked • Clear internal management accountability for H&S • Senior managers involved in H&S discussions across different functions (diagonally) • Senior managers chair incident investigations, ensure actions are implemented and sign off <p>Behaviour</p> <ul style="list-style-type: none"> • Senior Managers regular visits to site • Senior Managers include H&S in chats with staff – and follow up on actions • Senior Managers attend safety meetings and give feedback to staff • Respect chains of command for managing H&S • Senior Managers can identify good practices and areas for improvement and are aware of current initiatives • Senior Managers reward for good performance • Practice what you preach • Senior Managers are periodically reviewed for their H&S performance <p>Prioritisation</p> <ul style="list-style-type: none"> • Senior Managers brief CEOs about H&S • Senior Managers include H&S in investment appraisals • Senior Managers discuss H&S as first item in meetings - using open questions to discuss • Senior Managers delegate budgets for H&S projects • Senior Managers report H&S alongside other business • Senior Managers invest in tools for tracking performance <p>Measuring/monitoring</p> <ul style="list-style-type: none"> • Senior Managers monitor staff feedback to H&S through opinion or climate surveys • Senior Managers provide H&S briefings upwards and downwards • Senior Managers report according to KPIs • Senior Managers support developing new KPIs <p>Learning</p> <ul style="list-style-type: none"> • Encourage staff to identify and prioritise H&S issues <p>Support sharing knowledge</p>
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Literature Review

Ref No	015
Title	Bridge Procedures Guide
Author	International Chamber of Shipping
Source	ICS
Document Type	Industry guide
Date	May 1990
Keywords	Team work, leader empowerment
Abstract	<p>The Guide is intended to assist Leaders at sea in forming a team which will be able to develop efficient and safe bridge procedures allowing for all eventualities which may arise.</p> <ul style="list-style-type: none"> • It lays stress on the need for the Master to issue firm, unequivocal instructions in writing; ensuring that all concerned have a clear understanding of what is required of them • It encourages team members to discuss proposed procedures or actions with the Master when there is time and to question decisions where they believe mistakes are being made • The importance of teamwork under firm leadership • Advocates the use of checklists for routine procedures and for emergencies • Emphasises the need for training and familiarisation for newly joined personnel
Industry	Marine
Lessons learned	Not much, apart from the need for firm, confident leadership and the importance of teamwork.

Literature Review

Ref No	016
Title	Code of Good Management Practices in Safe Ship Operations
Author	International Chamber of Shipping/Shipping Federation
Source	ICS
Document type	Industry working code
Date	1990
Keywords	Ship-shore link, communication
Abstract	<p>In some respects this Code was the precursor to the ISM Code, which was first published in 1993. It aims to offer a voluntary framework of best practices against which ship-operating companies can measure their performance.</p> <ul style="list-style-type: none"> • Safety & efficiency are integral to good management and are the result of skills, knowledge and experience • The initiative for all safety programmes must come from the top of the company • Time lost through accidents means more expense and less business • It is vital to appoint a go-between (designated person) to act as a link between ship and shore • Safety & operational practices: an item for inclusion on every management meeting, at every level, both ashore and afloat • Regular two-way communication between ship and shore, including safety & operating practices • Establish proper contingency plans for all emergencies • Regular review of policy in this area • Appointment of Masters: must be fully conversant with and dedicated to the appropriate safety standards and be assured of the full support of management • There must be a clear & planned approach to personnel matters including qualifications & training programmes • The importance of rest periods for all (not only watch-keepers) • The need for regular communication between senior shore management and sea staff: regular visits to ships as well as shore-side seminars and briefings • It should be a management aim to motivate sea staff by providing clear information at all times – cultivating a climate of trust • Ensuring that all concerned ashore and afloat are familiar with all relevant legislation and regulations
Industry	Marine
Lessons learned	Commitment; communications; trust; training.

Literature Review

Ref No	017
Title	Safety Aspects of ship design & technology
Author	House of Lords Select Committee (Carver)
Source	HMSO
Document type	Report
Date	February 1992
Keywords	Crew size, ship-shore
Abstract	<p>As the title indicates primarily concerned with design & technology but deals with aspects of ship management and operations.</p> <ul style="list-style-type: none"> • Refers to a new type of ship-owner: the 'bean counter.' Looking for short- term profit; not committed to ship or master; manages fleet at arms length through management companies and manning agencies. Problems with such management systems are that even when operators are honest and responsible, the resulting length, complexity and weakness of the management chain militates against good safety management – the officers have no one to turn to • Is the company loyal to its seafarers? • Do the sea staff know the top men and meet them? • Crews need to be given more responsibility – feel valued • UK regulations increasingly threaten the master with sanctions over matters where in fact he has little control • Refers to the practical difficulties of protecting a Master who puts safety first from punitive action by the operator • Consequences of reduced crews – money saved on quantity may have to be spent to maintain quality. Reduced crew numbers leads to more risk of fatigue. "High stress and low morale" with consequences for safety: this refers to longer contracts; less training; mixed crews; social problems on board; isolation. Amounts to bad management • Shoddy management both ashore and at sea can lead to catastrophe • Risk assessment although well established in other spheres is relatively new to the shipping industry but is growing. Gaps in statistics on ship safety make effective risk analysis in shipping impossible. "When considering the quality of shipping operations, you have to be so careful not to waste time in Britain. We have only 1.6% of the world fleet. It is a world-wide problem." • Licences to operate: there is a gap in the safety system for shipping whereby other professions including seamen themselves, are required to hold certification: shore based operators need no professional qualifications • The failure of the UK Marine Directorate (DOT) to apply cost benefit analysis to ship safety • Modern science and technology not being adequately applied in many fields which affect ship safety, lives and the marine environment • Systems have evolved over the past two centuries to enhance safety at sea and are conducted on a scientific basis

	<ul style="list-style-type: none"> • Newer industries approach safety regulation in new & better ways – shipping must not be allowed to become a victim of own long history • A ship safety regime in an ideal world would: <ul style="list-style-type: none"> – Set primary safety goals for all operations; – Provide a safety case for every ship trading commercially. • Primary responsibility for safe ship operation should rest with the operator and not with the regulators (flag state) • Most serious obstacle to safety case approach is in the area of enforcement
Industry	Marine
Lessons learned	The quality and motivations of the owner/operator. Importance of risk analysis/assessment. Cost benefit analysis.

Literature Review

Ref No	018
Title	Safer ships, cleaner seas
Author	Lord Donaldson
Source	HMSO
Document type	Report
Date	May 1994
Keyword	Industry profile, Masters responsibilities, morale
Abstract	<ul style="list-style-type: none"> • Traditional values have slipped away. In the current climate of ingrained bad habits, inadequate supply of seafarers and depressed economic conditions, the prospects for improvement are not good <ul style="list-style-type: none"> – For many years, there has been a widespread lack of appreciation of the importance of operational matters. There has been a pre-occupation with the details of the equipment at the expense of regard for the ship's operation as a whole • Difficult for regulators to inculcate a safety culture: only operators, owners, Masters and crew can do this <ul style="list-style-type: none"> – It is for owners to set the structure within which the Master can operate – Good ship management depends on a "culture of safety where safety issues are given high priority in the boardroom as well as on the ship." • Bad owners and managers are behind most sub-standard ships <ul style="list-style-type: none"> – Erosion of the master's responsibilities – master more and more likely to contact shore managers before reaching decisions – Increasingly the master is seen as one in a chain of management yet his responsibility for safety has not in any way been reduced by the greater ease of communication – Masters should be given the clearest authority to act in a crisis • Competence and motivation of the crew is vital for safety • Not enough attention is paid to familiarity with an particular item of machinery or equipment and to instruction in dealing with emergencies • Masters should not have to carry out tasks, which with properly trained crew they would not have to do themselves • The need to manage cultural and language differences controlling communication in a crisis • Morale an important area: e.g. pay rates: people doing the same work alongside others who receive better rates of pay • Progress in advancing ship safety is generally re-active with new regulations generated by particular disasters and designed to prevent such accidents happening again. The Carver report (sic) proposed a new system to prevent accidents from happening in the first place, based on realistic analysis of the risks involved rather than prescriptive standards. It recommended that in the longer term, a safety case regime for ship operations based on primary safety goals should be agreed by the IMO and administered by flag states (difficult for the regulators)

Industry	Marine
Lessons learned	The role of good management; the erosion of the master's responsibilities; the need to concentrate on operational procedures; the value of risk analysis and safety case. Need to get away from re-active regulations.

Literature Review

Ref No	019
Title	Guidelines on the application of the IMO ISM Code
Author	International Chamber of Shipping/Shipping Federation
Source	ICS/ISF
Document type	Industry guide
Date	1996
Keyword	ISM Code
Abstract	<ul style="list-style-type: none"> • Its purpose is to assist shipping companies in the preparation of an effective Safety Management System (SMS) • It is vital to read the text of the ISM Code, which is short, simple, concise and comprehensive • The master is responsible for the safety of the ship and crew but overall responsibility for the administration and safe operation of each ship rests with the owner or any other organisation or person who has assumed the responsibility of the owner for the operation of the ship • The task facing all operators is to minimise the scope for poor human decisions which contribute to a casualty • Sea staff need to be properly informed and equipped • Every action taken should be based on a sound understanding of the consequences • ISM is based on safety regulation rather than the blame culture or on prescription Safety organised by those affected by its failure • An effective SMS enables an operator to measure its performance and allow areas for improvement to be identified. Benefits: <ul style="list-style-type: none"> – Improved safety consciousness and safety skills – Establishment of a safety culture that encourages continuous improvement in safety – Increased confidence of clients – Improved morale • The accessibility of senior managers throughout the period of the development of the SMS and their involvement thereafter, is a key factor • Allocation of adequate resources (financial, material and human) is vital • To remove barriers between ship and shore vital that the management philosophies and procedures of sea & shore staff are bound together as an cohesive unit. Ownership of the SMS to be encouraged in order to motivate sea and shore staff • All concerned must demonstrate continuing commitment with constant liaison between ship & shore • Safety management objectives should: <ul style="list-style-type: none"> – Provide for safe practices in ship operations and a safe working environment; – Establish safeguards against all identified risks – Provide continuous improvements on skills of personnel ashore and afloat

	<ul style="list-style-type: none"> • The ISM Code (Sect 5) clearly defines the master's role in implementing the SMS • Results of safety audits – may assist in identifying training needs including refresher courses
Industry	Marine
Lessons learned	ISM Code provides the framework within which ship operators can set their own standards and measure their performance. The responsibilities of the owner/operator and the need for resources. Continuous improvement and evolution of the SMS.

Literature Review

Ref No	020
Title	Guidelines on the application of the STCW Convention (1995)
Author	International Chamber of Shipping/Shipping Federation
Source	ICS/ISF
Document type	Industry guide
Date	1996
Keyword	Standards and regulations
Abstract	<ul style="list-style-type: none"> • Deals with technical rather than leadership skills • Intended to improve standards of training & qualification globally; imposes global minimum standards • Followed a series of high profile maritime accidents which drew attention to concerns about general levels of crew competence • Uniform minimum standards of compliance • Among new areas of responsibilities for ship operators: <ul style="list-style-type: none"> – Crew- co-ordination in emergencies – Minimum rest periods for watch-keepers (only) – Familiarisation with safety procedures for newly joined seamen – Training for all seamen in basic safety procedures – Special training for those with specific safety responsibilities – Training for those serving on certain types of ship – English language training for certain key personnel – No provision for non-technical training such as man management skills
Industry	Marine
Lessons learned	Deals with training and certification for technical skills but no provision for management skills training.

Literature Review

Ref No	021
Title	Health and Safety Executive Guidance Note 48
Author	HSE
Source	HSE
Document type	Industry guide
Date	Unknown
Keyword	Cause of accidents, cutting corners, fatigue, morale, culture, safety benefit
Abstract	<p>This guide provides advice to industry on how to influence human factors at work in order to improve health and safety. The following relevant points are worth mentioning:</p> <ul style="list-style-type: none"> • An example of poor human factor management: The Herald of Free Enterprise ferry sank in shallow water in Zeebrugge in 1987 killing 187 passengers and crew. The immediate cause was the failure to close the bow doors before leaving port. There was no effective reporting system to check these doors – commercial pressures and friction between the ship and shore had led to these lessons not being learnt. • Accidents can be caused by the following <i>job factors</i>: <ul style="list-style-type: none"> – Illogical design of equipment and instruments – Constant disturbances and interruptions – Missing or unclear instructions – High workload • Accidents can be caused by the following <i>individual factors</i>: <ul style="list-style-type: none"> – Low skill and competence levels – Tired staff – Bored or disheartened staff – Individual medical problems • Accidents can be caused by the following organisation and <i>management factors</i>: <ul style="list-style-type: none"> – Poor work planning, leading to high work pressure – Lack of safety systems – Inadequate responses to previous incidents – Management based on one-way communications – Deficient co-ordination and responsibilities – Poor management of health and safety – Poor health and safety culture • Cutting corners can be prevented by: <ul style="list-style-type: none"> – Increasing the chances of being detected (e.g. routine monitoring) – Considering whether there are unnecessary rules – Making rules relevant and practical – Explaining the reasoning behind rules – Improve design factors that affect the likelihood of corner cutting – Involve the workforce in drawing up rules to increase acceptance

	<ul style="list-style-type: none"> • Stress at work can be brought about by the following: <ul style="list-style-type: none"> – Work overload – Unclear role – Other people at work (e.g. relationship with boss) – Lack of job security – Lack of participation • Fatigue at work can lead to poorer performance on tasks which require attention such as decision-making. Often fatigue is seen as acceptable, and working long hours may even be accepted as part of the workplace culture. • Being aware of a hazard: a risk is seen as greater if we see it as having severe consequences or if we feel personally vulnerable. Over-confidence or familiarity can reduce one's perception of a hazard as significant. To improve our appreciation of risks we need information about the hazard, risk estimates, exposure modes, and available control measures. Fear-inducing messages do not always work as the person is more likely to assume this message is for someone else. Constant pressure is needed to make judgements of risk realistic. • Safety behaviour can be influenced by: <ul style="list-style-type: none"> – Education and training – Improved ergonomic design – Introducing a goal-setting and feedback programme • Organisational factors which are associated with good safety performance: <ul style="list-style-type: none"> – Effective communication – Learning from mistakes – Health and safety focus throughout – External pressures (e.g. regulations) – Committed resources – Participation and crew involvement – Managers show commitment and pull their weight – Balance of operations and safety – High quality training – Good working environment – Job satisfaction – Older and more experienced workforce
Industry	Marine
Lessons learned	Measures that can be employed to reduce cutting corners and improving safety benefit awareness

Literature Review

Ref No	022
Title	Cracking the Code
Author	Phil Anderson
Source	The Nautical Institute
Document type	Industry guide
Date	2003
Keyword	ISM Code
Abstract	<p>This guide reviews the ISM Code: the reasons for its implementation, its structure, introduction to the industry, enforcement, feedback on effectiveness or otherwise and its general conclusions. It includes two chapters written by others with their own experiences of building a Safety Culture. A particularly interesting Chapter describes experiences in the offshore industry after leaving the sea.</p> <p><i>Findings of the review are as follows:</i></p> <ul style="list-style-type: none"> • One of the benefits of ISM for the successful operators has been: accidents down/Profits up • The need for continuous monitoring is stressed • Confirms the need for accident reporting but also the need to minimise paperwork which clogs/undermines the system • Operators not always committed to their Safety Systems • There is value in employing permanent sea staff, particularly Seniors • Badly constructed SMS's are widespread: with off-the-shelf, inappropriate, 'get on with it' versions • ISM audit quality is questioned: class Societies do 60%, yet their involvement is queried • ISM is used by some operators as an excuse for non-investment in training • Owners are not responding to feedback from ships – they are dismissive • Internal audits are either poor or not carried out • There is no involvement of sea staff in preparing SMS's • Quote: "It is almost inconceivable to think of any other industry where the owner of a plant worth several millions of dollars, would hand over the management to individuals who are engaged on a casual labour basis - but that is what many operators did and some continue to do." • The importance of reporting accidents which should be thought of as a learning

	<p>opportunity</p> <ul style="list-style-type: none"> • ISM is a continual cycle of improvement: it needs sea staff backing, replies from the shore, and action from the shore • There was a widespread negative response to ISM from sea staff - more particularly from Europeans and older personnel • There is a tendency in shipping industry to blame sea staff for ISM failures • Many struggle to implement ISM due to poor SMS's • An analysis of successful companies revealed the following strengths from which safety culture flows: <ul style="list-style-type: none"> – 1. Leadership + commitment at highest level – 2. Paperwork reduced to manageable levels – 3. Sense of ownership/empowerment for sea staff and shore – 4. Continuity of employment ship & shore – 5. 2-way communication with mutual respect – 6. Awareness of importance of managing safety by all • Shipping personnel have good technical skills but poor management/leadership skills • Some senior ship officer see ISM as undermining their positions • Yawning gap between shore staff & ship people - demotivating <p>Findings of the report relating to offshore were as follows:</p> <ul style="list-style-type: none"> • Operators demonstrate their commitment by visibly appearing and making themselves heard and by being seen to invest time and money • Business & safety excellence go together • Mention is made of the "HSE Climate Questionnaire" which enables organisations to carry out an audit of their current safety situation. • Various Training opportunities for seafarers are mentioned by the author of the Chapter on Offshore experiences such as: Crew Resource Management training Courses, STS workshops (Safety thro' Satisfaction - tapping the knowledge of the lower ranks), Developing Management Skills & Communications Skills Training.
Industry	Marine
Lessons learned	The level of implementation and effectiveness of the ISM code, with current perceptions and feedback

Appendix B: Issues Analysis

This appendix contains the issues analysis, which was one of the key first tasks in the project aiming to provide a logical structure on the key issues for the project to explore in subsequent tasks.

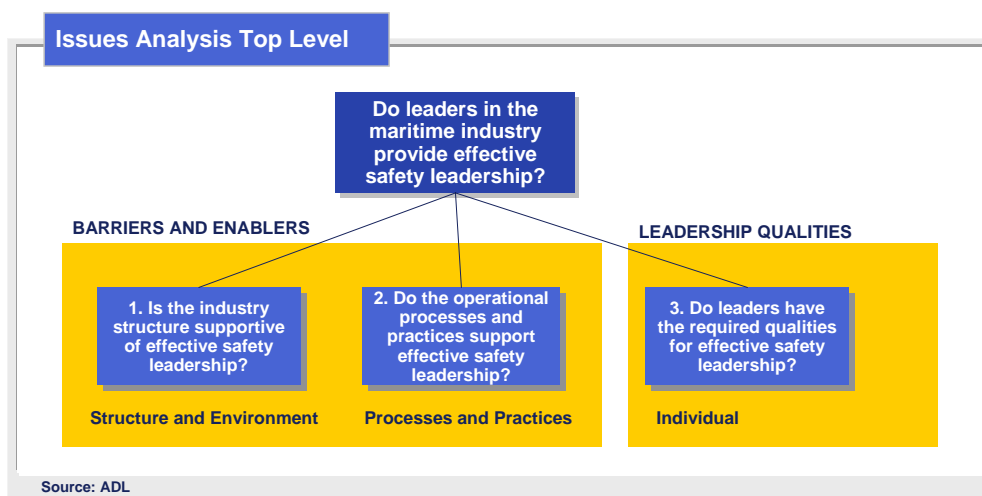
It was developed in two stages:

- A brainstorming session carried out by the Arthur D. Little team encouraging a ‘flow’ of ideas
- A logical structuring of issues

The interview protocol (Appendix C) is based around the issues analysis presented here.

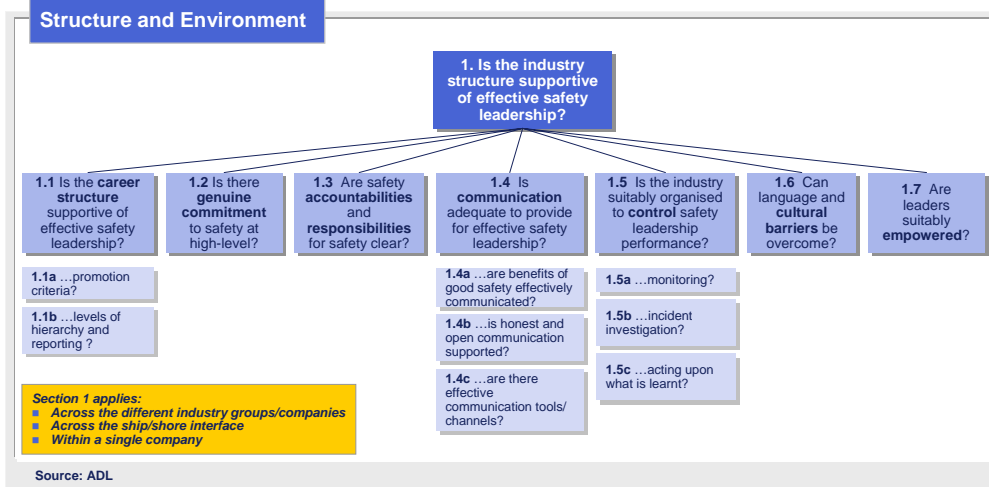
Issues Analysis

Overall question: “Do leaders in the maritime industry provide effective safety leadership?”



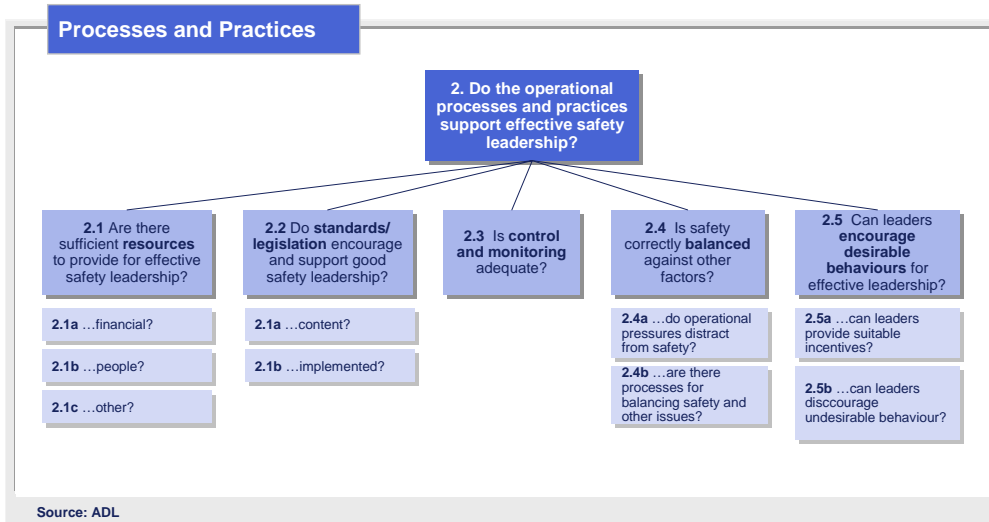
Issues Analysis

“Is the industry structure supportive of effective safety leadership?”



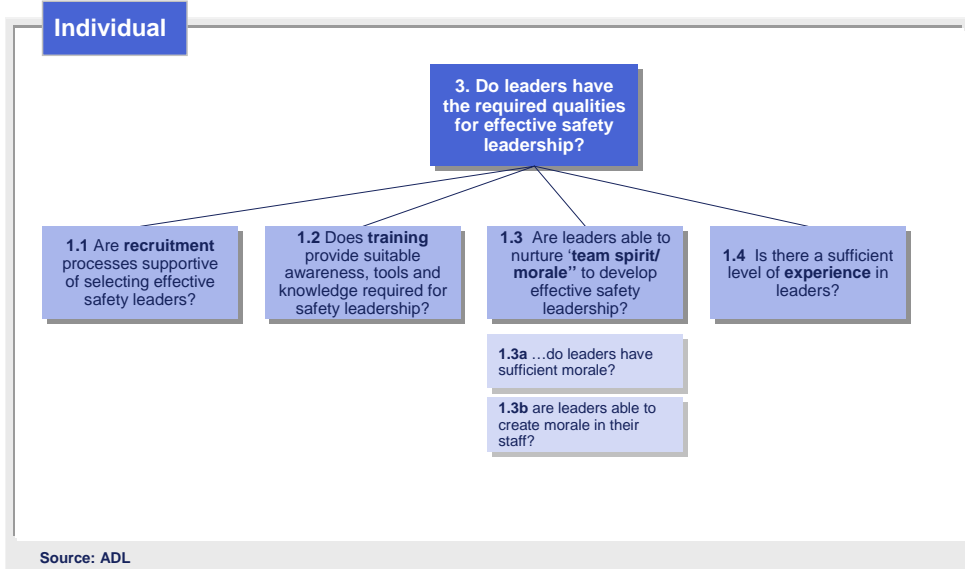
Issues Analysis

“Do the operational processes and practices support effective safety leadership?”



Issues Analysis

“Do leaders have the required qualities for effective safety leadership?”



Appendix C: Interview Protocol

This appendix presents the interview protocol, which was used as a basis for questioning during industry consultation. It should be noted that this protocol was modified and expanded throughout the period of consultation due to the following factors:

- Nature of the person being consulted (e.g. seafarer, CEO of shipping organisation)
- Emerging findings which we sought to clarify

Maritime and Coastguard Agency Questionnaire

Driving Safety Culture: Identification of Leadership Qualities for Effective Safety Management

Names of Interviewee(s):	ADL Interviewer(s):
Maritime Organisation:	Place:
Respective Titles of Interviewee(s):	Time:

High Level Question	Do leaders in the maritime industry provide effective safety leadership?
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Initial Questions
A) Who do you report to?
•
B) What are their safety responsibilities?
•
C) What are your safety responsibilities?
•
D) Who would you describe as 'leading safety' in your organisation?
•

1. Structure and environment: Is the industry supportive of effective safety leadership?
1.1 Do you feel that the career structure is supportive of effective safety leadership? Please give examples.
•
1.1a Would you agree that the current promotion criteria support effective safety leadership? If not, what changes in the crit
•
1.1b Tell me about the career levels of hierarchy and reporting . Who provides leadership within this structure? Does the h leadership?
•
1.2 Do you feel that safety is genuinely important to those at high-level? If yes, how is their commitment demonstrated?
•
1.3 What do you understand of safety accountabilities and responsibilities ? Are they clearly defined?
•
1.4 Would you say that communication supports effective safety leadership? If not, what changes in communication would
•
1.4a What safety related messages have you received? Have the benefits been well communicated?
•
1.4b When and in what format are safety matters discussed within your organisation? Is it useful? Would you agree that the and open?
•
1.4c What communication tools and/or channels do you use, and do you feel they are effective? If not, can you suggest a
•

1.5 How do you think the industry is organised to control safety leadership performance? Does it work?
•
1.5a How is safety monitored ? Would you say that the monitoring process is effective?
•
1.5b Tell me about the process for incident investigation . Would you say that incident investigation in your organisation is effective (causes, learning, blame, etc.)
•
1.5c Does your organisation act upon what is learnt ? Is the follow-up sufficient? If not, why not?
•
1.6 How extensive are language and cultural barriers ? Can these be overcome?
•
1.7 Do you feel that leaders are suitably empowered to effectively manage safety? If not, why not?
•
2. Processes and practices: do the operational processes and practices support effective safety leadership?
2.1 Do you feel that there are sufficient resources (financial, people, other) to provide for effective leadership? What improvements made? How significant a barrier are these?
•
2.2 How do standards/legislation encourage and support good safety leadership? Examples of good and poor standards.
•
2.2b Are these standards well implemented ?
•

2.3 Do you feel that safety control and monitoring is adequate? Please justify your answer.
•
2.4 How is safety balanced against other factors in your organisation? Is the balance correct?
•
2.4a Do you feel that operations processes can sometimes distract from safety? In what way? Examples.
•
2.5 Can leaders effectively encourage desirable behaviours (and discourage undesirable behaviours)? Describe.
•
2.6 Is there a safety support function in your organisation? What do they do? Is it helpful?
•

3. Individual: do leaders have the required qualities for effective safety leadership?
3.1 What are the recruitment criteria/processes? Do recruitment processes help to select effective safety leaders?
•
3.2 Do you feel that training supports safety leadership (suitable awareness, tools and knowledge)? Examples.
•
3.3 In your opinion, do leaders nurture 'team spirit/morale' to develop effective safety leadership? Examples.
•
3.3a Would you say that leaders have high or low morale ? Why?
•

3.3b Would you say that staff have high or low morale ? Why?
•
3.4 Do leaders have a sufficient level of safety experience ? Why do you think that? What could be done to improve it?
•

4. Summary question	
4.1 What in your view are the main barriers to effective safety leadership ?	
•	
4.2 What in your opinion are the one or two things you would change to overcome these?	
•	

5. Suggested contacts	
•	
6. Suggested documentation	
•	

Appendix D: People Consulted for Interview

In total 65 people were consulted for the study over the period May to August 2004. This appendix provides details of the people consulted for this research giving:

- Classification and names of the organisations consulted
- One-on-one versus group interviews

It should be noted that all those consulted were very interested in participating in the study, and were found to be helpful and enthusiastic. The authors would like to thank all those involved for their time.

Organisations Consulted

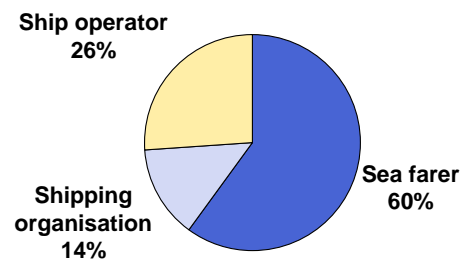
The organisations consulted for this study can be classified as follows:

- **Shipping organisation:** for the purposes of this study a shipping organisation was classified as an organisation providing support to the UK maritime industry. Shipping organisations include underwriters, representatives of sea-farers and government bodies.
- **Ship operator:** this classification included ship owners, third party ship managers, safety superintendents, and safety and security officers. Ship operators were classified into one of three groups:
 - Oil tanker
 - Passenger ferry
 - Dry cargo
- **Seafarer:** for the purposes of this study ‘seafarer’ classified all those consulted who were actively working on ships (including 21 people who were interviewed at their place of work on the ship), or were retired seafarers. Such people included Masters, deck and engine officers and ratings (including catering ratings). Seafarers were classified into one of three groups:
 - Oil tanker
 - Passenger ferry
 - Dry cargo

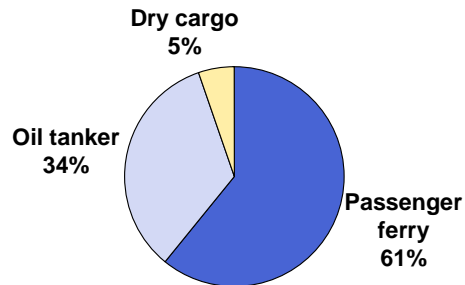
Using the classification described above, the following organisations were consulted:

- **Shipping organisations**
 - CHIRP
 - North East P&I Club
 - British Chamber of Shipping
 - IMO
 - The Nautical Institute
 - NUMAST
 - MCA
 - MAIB
- **Ship operator**
 - Carnival Corporation Plc (P&O Cruises)
 - Chevron Texaco
 - BP Shipping
 - Celtic Pacific
 - Everards
 - Stella Drilling
- **Seafarers**
 - Chevron Texaco ships
 - P&O Ferries
 - Zodiac Maritime Limited

Of the 65 people consulted, 9 were from shipping organisations, 17 were ship operators, and 39 were seafarers. The percentages of these different groups consulted are illustrated in the pie chart below.



The following pie chart shows the percentages of the three sub-groups (oil tanker, passenger ferry and dry cargo) interviewed in ship operators and seafarers combined. Passenger ferry personnel were the higher proportion of those consulted.



One-on-one and Group Interviews

Interviews conducted during the study can be divided into two types of interview:

- One-on-one: 47 people were interviewed one-on-one (although in a few interviews two interviewees attended)
- Group: two group sessions were conducted
 - Warsash Maritime Centre: a small group of 3 student officers was interviewed
 - P&O Ferries, Portsmouth: a group of 15 people were interviewed (a mixture of sea-farers and ship operators) during a ship-shore interface safety meeting

