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The effectiveness of the ISM Code: A qualitative enquiry

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ABSTRACT

Studies conducted to determine the efficacy of the ISM Code in the past include investigations of the trends of accident numbers and insurance claims and users' perceptions. None of these, however, could produce a definitive conclusion. This is because both the use of safety outcome as well as the use of perception have inherent problems and are not reliable. This paper takes a different approach. It draws on wider research on management of workplace health and safety to ascertain whether or not employment and social conditions that support effective implementation of self-regulation are present in the maritime context. The findings reveal a considerable disparity between managers' and seafarers' understanding of the use of the Code resulting in a wide gap between its intended purpose and practice. The analysis shows that the critical factor is the lack of seafarers' participation in management of workplace health and safety. The underlying causal factors for such lack of participation were located in seafarers' poor employment condition and low-trust relationship with their managers.

1. Introduction

The International Safety Management (ISM) Code, which was introduced in 1998, brought in self-regulation to the maritime industry. This piece of regulation required managers of each organisation assume a greater responsibility to manage occupational health and safety (OHS) on their ships. It is a significant shift from the earlier command and control mechanism, which required inspectors from a ship's regulating authority (Flag State) to ensure statutory compliance largely through inspections. The Code instead required the managers to lay down systems of work involving management of risk along with self-checking and self-critical measures for the purposes of verifying and continually improving its performance [1].

However, across the industry it is widely argued that shipboard OHS has not seen noticeable improvement since the Code was implemented. This has led to considerable debate among practitioners and policy-makers in the industry on the efficacy of the Code. One article in the maritime press, for instance, claimed that other than the leading 20% of ship-owners the remaining largely regard the ISM Code merely as a paper licence to conduct their businesses. They fail to look beyond short-term economic gains and thus do not see the purpose of investing resources in shipboard safety [2].

Many other articles reported that the culture of seafarer victimisation fails to support the implementation of the Code. As ship-managers frequently point to seafarers' negligence for causing shipboard accidents, among other impacts, it results in underreporting and thus in undermining one of the core elements of the Code [3,4].

More commonly featuring criticisms reflect bureaucratic nature of the Code. They highlight that the ISM Code compels seafarers to fill an array of forms and checklists. Such paperwork, the articles report, does not contribute to shipboard safety but in fact takes a significant amount of seafarers' time and focus away from working safely [5–7].

The general concern has been that many unscrupulous shipowners with suspect safety management practices continue to operate their ships under the ISM certificate, which calls into question the value of the Code.

The significance of the study stems from the importance to determine whether or not the new piece of regulation is able to improve standard of safety in the maritime industry. It is particularly critical as the ISM Code is the main instrument on safety management in the maritime industry, which, research shows, is one the most hazardous judging by its occupational mortality record [8].

2. Literature review

2.1. Previous studies on the ISM Code

Several studies have been undertaken in search of the efficacy of the Code. However, their findings do not provide a definitive indication. For instance, in 2008 the International Union of Marine

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Insurance report based on marine insurance data presented conflicting findings. It showed that while the number of total loss of ships (such as due to foundering) has declined since 1998, the number of serious losses (such as due to collision) has increased more than fourfold during the same period [9].

One recent study [10] concluded a more positive outcome of the ISM Code in the context of Greek shipping. It carried out an analysis of 268 ship accidents over a period spanning before and after the implementation of the Code and showed that the rate of incidents due to human error as opposed to other causes dropped from around 64 to 52 per cent. The positive impact was especially evident in the tanker and roll-on-roll-off passenger sectors where it dropped from around 84 to 55 per cent. While, this piece of research followed a rigorous analysis it took a narrow perspective as it did not incorporate other possible sources of influence on shipboard safety, such as the market condition [11] or the impact of other forms of inspection, such as those conducted by Oil Majors in the tanker sector [12].

An earlier large scale international study on the effectiveness of the ISM Code was undertaken by Anderson [13]. In 2001 over 3000 survey questionnaires were used to analyse perceptions of seafarers and shore-based stakeholders on the usefulness of the implementation of the ISM Code. The study showed that seafarers generally were more critical than their managerial counterparts, while among the seafarers those from OECD countries, such as the UK, were more dismissive of the values of the Code compared to their colleagues from places like India and Philippines. In conclusion the researcher suspected that the lack of 'verdict' was because different cultures across the globe produced a cluster of differing results.

Between 2004 and 2005 the IMO too conducted another study using a similar method [14]. It engaged an independent group of experts comprising of academics and industry professionals who sent out questionnaires to Flag State Administrators, shore-based managers, other industry practitioners and seafarers. Between 96 and 99 per cent of the 3109 respondents considered the Code useful. However, the group of experts felt sceptical about the overwhelmingly positive response as it had hoped for a better insight to the situation. It thus rejected the results citing positive bias of the sample. More importantly the study acknowledged that it suffered from methodological shortcoming, which the experts felt 'could only be addressed by investing in a study employing researchers in the field to ensure that views of the non-supporters could be specifically captured' (p. 28).

The failure to determine the Code's impact on an international scale using perception studies is not unusual. Previous studies in other workplaces [15] too have reported difficulties of employing a common yardstick in different contexts. Equally, use of safety outcome as an objective measure also has its problems. Under-reporting is widely acknowledged as problematic, which is also the case in the maritime industry. Moreover the majority of maritime regulatory States as such do not publish their data nor do the researchers find it easy to access them. Even when such data is obtained, the variation in data collection technique employed by the different administrators makes it considerably challenging to compare them and draw a conclusion on safety standard at the international level [16–18].

2.2. Development towards maritime self-regulation: the context

The introduction of the ISM Code can be traced back to the early 1980s when an investigation to tanker casualties revealed poor standard of management of ship safety [19]. The report urged ship managers to play a greater role in making their ships safer by providing adequate support to ship captains. Subsequently the International Chamber of Shipping and the International Shipping Federation jointly produced a voluntary guideline: Code of Good Management Practice in Safe Ship Operation [20]. In 1986, the Department of Transport in the UK also brought out a Merchant Shipping Guidance Notice *M.1188* named: Good Ship Management, for ships under the UK registry [21]. It too pointed to the importance of good management practice from both ship and shore side for better OHS. Both these promoted voluntary self-regulation and are the early precursors to the ISM Code.

The move towards self-regulation in the maritime industry is a reflection of wider political and economic developments in the industry. Till around the mid-1960s a significant majority of international shipping was owned, registered and operated from a relatively small cohort of nations. They included Japan, USA and many Western European countries such as UK, France and Norway. Among other consequences this promoted employment of domestic seafarers who also enjoyed local trade union support. These nations generally imposed high standards for admitting ships to their registry and maintained stringent regulatory practices. However, the ship-owner – regulator – seafarer relationship began to change in the late 1960s. As a consequence of deregulation driven by economic globalisation the ship-owners in increasing number moved away from their national jurisdiction and chose to transfer the registry of their ships to countries such as Panama, Liberia and Cyprus—identified as Flags of Convenience (FOC). The major impetus for such move was lenient regulatory standards required by the FOC, which ship-owners found alluring for its cost benefit. In particular their flexibility in employment rules enabled ship-owners to cut labour cost and maximise profit [22]. By mid 1970s the global balance of ship registry (in terms of ship size) had already tilted towards FOC and by 2005 their share stood at over 80 per cent [23].

Such unprecedented developments, which took place over a relatively short period of time, resulted in a sudden void in the global maritime regulatory structure. Its impact was also evident from the growing number of accident and pollution incidents, which prompted policy makers to move away from relying on Flag State regulatory control to adopting a radically different mechanism for regulating workplace safety and pollution.[1] Self-regulation in the form of implementing the ISM Code was thus seen as the only viable solution to the otherwise impenetrable problem of deregulation [24].

Throughout the 1980s discussions and deliberations on the content of the Code went on between policy makers at the IMO. In 1987, a UK registered passenger ferry the *Herald of Free Enterprise* capsized in the English Channel with the loss of 188 lives, which prompted a speedy adoption of the final draught. The accident investigation produced a damning report, which located serious lapses on the part of the shore-based managers of the ferry company [25]. It stated that the 'Board of Directors did not appreciate their responsibility for the safe management of their ships' and highlighted repeated failures on their part in providing adequate support to the captains for safe operation of the fleet (p. 14).

The introduction of the Code also led to rearrangement of responsibilities with the managers made legally responsible for safety of ship and its seafarers. In a significant deviation from the way regulations are generally implemented in this industry, the ISM Code required the owner of each ship to report the detail of the company responsible to manage the ship's day-to-day operation to the relevant Flag State. This was an important step to establish the link between the Flag State, the ship-owner and the ship.

[1] ISM Code covers shipboard safety and pollution prevention but not occupational health. However, for the purpose of discussing it in line with the wider literature the term Occupational Health and Safety is used.

Acknowledging that shipping companies differed in their structure and function the ISM Code provided a broad framework within which companies were required to develop their own policies and procedures in the form of safety management system (SMS). Among other provisions it required them to develop work procedures involving management of risk, maintenance of ship and equipment, emergency preparedness and reporting of workplace incidents as well as self-critical elements such as audits and review of the current system. The Flag State of each ship retained legal responsibility to conduct regular audits to ensure that the managers implemented these provisions of the Code. On successful verification they issued a certificate titled Document of Compliance. The Flag State was also required to conduct regular audits on board ships in which they had to verify that the management office and the ship were operating in compliance with the SMS. Once that was established each ship was issued with a certificate titled Safety Management Certificate. Both these certificates were essential for a ship to trade.

In addition to the overall responsibility, one or more managers were required to be identified as the 'Designated Person' who was required to monitor shipboard OHS. The Code required this person to have access to the highest level within the management and ensure that adequate resources are made available to the ships. Likewise on ship, the captain was made explicitly responsible to ensure that the implementation of the Code also received utmost sincerity. In particular he was required to motivate his shipmates to comply with the policies and procedures and review and report any deficiency to the shore-based management [1].

The significance of the ISM Code can be further located in its inclusion in the SOLAS convention, which specifies the fundamental requirements of shipboard safety and is thus regarded 'as the most important of all international treaties concerning the safety of merchant ships' [26]. It showed that effective management deserved its place alongside the more traditional safety requirements such as the specified minimum standards for ship construction, life-saving and navigational equipment.

While the introduction of the Code was an attempt to address OHS concerns the developments in global political economy, which led to its introduction in the first place also brought profound changes to the industry. Among other consequences it negatively affected seafarers' employment relations and curtailed the role of trade union organisations [27].

Since the 1980s it became a common practice to employ seafarers from overseas through outsourced agencies on a relatively less rigorous employment condition. Studies show that increasingly ship-owners offered short-term contracts to seafarers in order to avoid obligations towards their future employability. There was also purposeful downsizing, which compelled seafarers to multitask and work longer hours [28,29]. Kahveci and Nichols from their study [30] of 627 seafarers working on the car carrier ships showed that 96 per cent of the respondents were engaged in fixed short-term contracts, which lasted between six and 12 months. They were required to work in harsh conditions and put in an average of over 14 h per day.

The new ship owning, manning and regulating arrangement made it significantly more complex for the maritime trade union organisations to operate. With seafarers being employed from different parts of the world and the ship-owners physically removed from the ship's registry and often also from its trading route, potency of trade unions to liaise with the seafarers and make an impact on their employment and OHS concerns was curtailed [31,32].

2.3. Effective self-regulation requires supporting conditions

Walters and Frick [33] are among the scholars who argue that effective self-regulation is not achieved simply by changing regulations and implementing SMS but through employer's commitment to safeguard workplace as well as employee's participation in its management. The latter is particularly crucial as employees possess the requisite practical knowledge of assessing and mitigating workplace hazard. Besides, workers' involvement in the decision making process of risk management also promotes workplace democracy, which further encourages them to contribute to the process.

Research shows that a set of employment and social preconditions are crucial to make employee participation effective. Among them a secure job leading to a long-term professional relationship with managers is found to be critical. Its absence fosters job insecurity and hinders participation. Several empirical studies support this cause-and-effect analysis. For instance, a retrospective study of employment practice and OHS outcome drawn from 48 studies found that in 44 of them job insecurity had a direct correlation with poor communication between workers and their managers. This in turn resulted in poor OHS outcome in these organisations [34].

It is also argued that trade union organisation promote effective employee participation. It stems from the notion that the inherent power inequality that exists between managers and employees is best moderated through the active involvement of trade unions. They help employees form into organised workforce and facilitate collective bargaining between managers and employees in all matters related to employment. Such contribution from trade union ultimately helps build better employment relations through effective communication between workers and managers [35].

On the social relations level, a high-trust based relationship between managers and employees is an important precondition for effective employee participation. Fox [36] points out that trust emerges when managers value their employees and show long-term interest in their career. They typically entrust employees with a high degree of discretion in their jobs and show long-term obligation towards them. The author also shows that when workers are offered such social conditions they reciprocate by showing personal commitment to their job, which among other consequences promotes their participation in management of risk [37].

The discussion therefore suggests that the introduction of self-regulation alone is not adequate to safeguard workers' OHS. Its success is heavily reliant on employment practice and social relations of employment. The condition in the maritime industry, however, portrays a picture that is unsupportive. This study investigates such conditions in more detail and identifies how it specifically impacts upon the practice of the ISM Code.

3. Method

Considering the challenges faced in the previous attempts to determine the effectiveness of the ISM Code this study acquires data by going to the field—which is a suggestion that was also proposed by the IMO [14]. This study was conducted between 2006 and 2009 and followed a qualitative method using a case-study approach. The suitability of this method for inquiring into the practices of workplace is widely acknowledged in the research literature. As argued by Eisenhardt [38], it facilitates an in-depth understanding of the subject in its natural setting, which is particularly suitable to reveal the social and employment conditions influencing operation of the ISM Code.

For the purpose of the study two tanker organisations were chosen as case studies. It involved collection of data from their management office and from two ships of each of the two organisations. Both managed fleet of tankers and had a good business reputation. Their rates of Port State Control detention

were considerably lower than the industry-wide average [39]. Besides, both organisations carried cargoes for Oil Major Companies, such as BP and Shell, which suggest a high operating standard [40]. The safety record of each of the four research ships was at least at par with its parent organisation's average.

The management offices of the two organisations were both located in Europe. The ships of the first organisation traded globally and the other specialised in the European waters. Data were collected by reviewing Company SMS and related documents and archived correspondence including communication with ships. Also, in total 20 persons from the two management offices who were involved with the day-to-day operation of ships were interviewed, with each interview on average lasting an hour.

Subsequent to that, 49 days were spent on four research voyages on ships registered on different flags belonging to both TMN and FOC. The trips were conducted in the Indian Ocean, North American and European waters. In total 67 seafarers who came from East European, Far East and OECD countries were interviewed—each interview lasting 90 min on average. Data collection also involved observation in which the seafarers' everyday activities were noted in a diary.

The copious amount of data was analysed with the help of *N-Vivo* software. A code was assigned to each of the ideas that emerged from the different data collection techniques. Upon further analysis several of these codes were put together as themes, which were subsequently analysed with the help of the extant literature.

4. Data and analysis

The findings showed that managers and seafarers in the two organisations were operating with fundamentally different understanding of the purpose of the Code. The disparity between the two that emerged from the study is discussed below.

4.1. Perception towards SMS: compliance (with what?)

Both shore-based management organisations had up-to-date Document of Compliance certificates from relevant Flag States and all their ships too were issued with Safety Management Certificates, which made them legally compliant with the ISM Code. They had suitably qualified managers with clearly identified responsibilities. To comply with the specific requirements of the Code the first organisation had two Designated Persons who also held the positions of Senior Manager and were supported by two assistants to work on ISM related matters. The second organisation had one Designated Person who had the exclusive task of looking into ISM audit and certification across the fleet. Their SMS covered policies and procedures for safe working and were well supported by forms, checklists and entry-permits. The archived documents and communications also indicated that managers conducted regular audits and appeared keen on safe shipboard operation.

In their interviews managers of both organisations claimed that their SMS was robust and well suited for making their fleet safe. They pointed out that it drew on standard maritime guidelines and covered all types of shipboard operation. Managers also believed that their organisation had ample resources and that they offered necessary support to their seafaring colleagues to comply with SMS. A Designated Person of one of the companies, for instance, said:

> 'Our SMS draws on all regulations and marine publications. It has formalised safety management, which only needs to be followed properly… we have a complete department for the ISM Code'.

Managers also highlighted that the most common cause for accidents at sea was seafarers' non-compliance with SMS. They attributed such non-compliance to seafarers' apathy towards following procedures. To make the point one of them, for instance, said:

> 'It is straightforward—for every accident we have traced back the roots to human error and their non-compliance with the procedures [written in the SMS]'.

In support of this argument nearly every manager pointed to two particular features of ship operation, which influenced their understanding of the purpose of the Code. First they highlighted that as the ships remained out of their reach for most of the time they lacked the scope to conduct physical surveillance, which is why they were uncertain about the practice followed on the ships. As a result they felt that they had to ensure that the management of safety was standardised and strictly implemented and not left to the seafarers. This was depicted by one senior manager who said:

> 'How can I know what goes on our ships? These days with the quality of crew it is even more crucial that we ensure strict compliance with SMS'.

Second, managers also revealed their perception on seafarers' lack of familiarity with their workplace. Seafarers' work and leave arrangement were such that every few months the on-board composition would change completely, which is why the managers felt that they had to take initiatives to ensure that seafarers were adequately guided in shipboard operation including in the management of safety. One of the managers who articulated this issue well said:

> 'The captain and the crew are changing all the time—sometime we get one or two old hands but mostly they don't know what has been happening to their ship, which is why the standard procedures must be followed'.

In contrast, the seafarers across the two organisations unanimously dismissed the role of the SMS. The officers in particular suggested that the operational checklists were at best reminders, which were filled mostly out of habit. Without a single exception they claimed that it was not the SMS but their skills, which they honed through their work experience, helped them achieve shipboard safety. The real assessment of risk was conducted by putting into practice their experiences and expertise. One of the ship's engineers, for instance, said:

> 'SMS may help you if you do not know the basics or perhaps when you want to know the company's policy on something you rarely do, otherwise it is best left on those shelves. What we need is experience and that does not come from reading those manuals'.

Seafarers also presented a different perspective on the use of standardised SMS. They claimed that it merely offered generic information about work procedures, which did not help them address eventualities that arose during the course of their job. Senior officers in particular were critical of this deficit, which was well articulated by one of the chief officers, who said:

> 'This SMS guides me to a series of checks I should conduct before cleaning the tanks. That everyone knows. It does not say anything about how to fix a problem when something goes wrong. Everyday so many things go wrong'.

Moreover, seafarers also criticised how the procedures in the SMS provided no ship-specific information. They complained that for the purpose of standardising the instructions, procedures and

checklists across the fleet the utility of SMS was compromised. This was also captured in my field notes in which it was highlighted how some engineers on a ship found the company based SMS superfluous and instead regarded a set of ship-specific instructions more valuable. It read:

> 'On this ship engineers followed a special manual, which was a compilation of instructions for various engine room maintenance jobs. It enumerated hazards and eventualities that were encountered in conducting these tasks in the past and outlined step-by-step guide aided with diagrams for conducting these tasks'.

On inquiring about the purpose of using this manual in lieu of the official SMS, one engineer pointed out:

> 'This manual is updated by us. It shows the layout of the machineries and the diagram of all the piping. It has been followed from even before this ship was handed over to the current managers… It is very useful'.

The incongruity between managers' and seafarers' views on the purpose of the ISM Code stems from the fact that SMS was inflexible and unable to accommodate what the seafarers were prepared to offer. Managers however felt that such rigid application was essential to counter seafarers' apathy towards rule following and discontinuous employment. The difference in their understandings was also reflected on how it was implemented, which is further explored in the next section.

4.2. Implementing SMS through bureaucracy

In both organisations managers complained that all their efforts to make SMS effective were not well supported by their seagoing colleagues. This friction led them to find ways to make seafarers more compliant with the company's SMS. Archived documents and correspondence suggested that managers used several ways to do so. Among them seafarers' training and conducting more surveillance were most common.

One initiative was the 'behaviour based training programme' specifically aimed at improving seafarers' rule following attitude. In this programme ships' senior officers were required to observe their junior colleagues at work and note their behaviours against the required procedures. The observations were later sent to managers for analysis.

In both organisations managers carried out surveillance by scrutinising logbooks, forms and checklists as evidences of seafarers' compliance with SMS. The superintendents' visits to ships—which took place on average once every three to six months—and the ISM auditor's annual trip were specific occasions when seafarers' compliance was monitored more closely. The importance of verifying paperwork was also captured in the interviews. One manager, for instance, emphatically stated:

> 'We ask our auditors to thoroughly verify ship's paperwork and establish whether or not the SMS was being followed. Until the paperwork is done the job is not done. Good quality paperwork reflects a well-run ship'.

Indeed the company's own auditors scrutinised paperwork in much detail. During the process they checked and crosschecked the archived logbooks and checklists and interrogated the officers whenever there were inaccuracies. Interviews and archived audit reports clearly showed that its purpose was largely confined to paperwork verification. One auditor, who was also the company's safety manager, for instance, remarked:

'Checking documentation is in fact the only thing I do. I say 'are you following our policies? If so, please show me the piece of paper'… I have to have hard evidence and attach the photocopy of that faulty checklist as objective evidence'.

The obsession with paperwork was even more evident from the data collected from ships. Entries in the diary revealed that on all four research voyages officers spent several hours every week in filling forms and checklists. Often these were done in the evenings and during watch-keeping periods; in some cases they were filled retrospectively or worse even totally falsified. One of my diary entries, for instance, read:

> 'On this ship too, forms are being filled and checklists are being ticked by the officers long after they were meant to be done. For instance, I notice the 2nd Officer filling passage planning forms for the last passage during his watch. This clearly does not contribute to safety'.

The purpose of the ISM Code, which was meant to offer the necessary support to ship captains to ensure a safe operation of ships and continuously improve safety management skills did not appear to be the objective in practice. Clearly the managers complied with the Code to the letter and not to its spirit. In the process they faced major resistance from seafarers who considered this approach inadequate. Managers however interpreted it as seafarers' apathy and deviance. Their emphasis on training and rectifying seafarers' behaviour are examples of such interpretation. Yet, seafarers did not openly oppose the top-down implementation of the SMS. Such practice was more pronounced in the operation of incident reporting, which is discussed in the next section.

4.3. Blame and fear

The incident reporting policies in both organisations recognised the importance of operating a no-blame culture and highlighted that the purpose of reporting incidents is to identify their underlying factors and not to apportion blame to individuals involved. The procedures laid out in the two SMSs and the actual practices, however, were markedly different. The questions in the reporting forms and the underlying factors that investigators were encouraged to look out for suggested that the focus was to identify seafarers' flaws. The questions for examples included: 'was attention divided across many tasks?' and 'were regulations ignored to complete operation?' Likewise the recommended root cause options included 'failure to follow rules, lack of ability and lack of knowledge'. These clearly complemented the notion held by the managers about seafarers' lack of ability and their deviant attitude discussed earlier.

While some managers were in denial that the incident reporting system facilitated blaming of individuals, many admitted that there was too much at stake for them to follow a no-blame culture. They considered it as their responsibility to ensure that the ships ran safely even if that meant finding a quick solution to shipboard incidents. It led to rectifying the 'deficiency', which in most cases meant that they had to take action against the individual as otherwise the same person could repeat the mistake. One of the Designated Persons, for instance, depicting this view mentioned:

> 'We do both, identify who is at fault and also carry out a root cause analysis. How else can we determine what caused the problem and solve it? I don't think that we ever turn a blind eye to the faulty crew. It is too idealistic'.

While it is maybe the case that seafarers' error could lead to an incident, what is disturbing to note is that the whole process of incident reporting was a predetermined and deliberate mechanism to apportion blame to individual seafarers. Such practice also

had major repercussions in the way in which the seafarers responded to it. They felt fearful that by reporting incidents they would invite trouble, which would affect their subsequent employment chances. On this note one of the chief officers mentioned:

> 'We report only when there is damage to the ship or perhaps to the jetty… or also when someone is injured. For others, we don't'.

When inquired further, the interviewee responded:

> 'That would give the office [management] a lot of ammunition to attack us. One report and they would start firing questions and eventually harassing us'.

Regardless of the nationality or rank of the seafarers, their fear of being blamed for shipboard incidents and near-miss occurrences was the most common finding from all four ships. Their relationship with their managers was embedded in the fear of losing job and exhibited scepticism. Such conditions led to poor communication within the organisation and especially stifled seafarers from expressing concerns to their managers. It encouraged underreporting and undermined the very purpose of the Code.

In view of this, managers also felt that among seafarers the ratings were most reluctant to support the requirements of SMS. In way of justifying their claim, they highlighted how ratings refused to speak up during safety meetings or ask questions to indicate their interest in safety during training sessions. Such a notion was evident from the interviews of ship-superintendents who routinely visited ships. One of them, for instance, said:

> 'I don't know why they [ratings] sit quietly… it could be because they can't speak English or perhaps they don't know what's happening around them due to lack of training. Maybe it's their nature from [the countries they come from]… could be lack of motivation—who knows?'

Ratings provided their own explanation and revealed their concern about how they might be wrongly interpreted. They were worried that their participation could make them appear as 'loud and disobedient'. Their interviews showed that their silence was a measured response, which they felt increased their chances of getting reemployed in the same company. One of them explaining this concern said:

> 'I have wife plus two children who go to university… for sure I need job… I'd do anything to keep job… Talking too much is not good because it may show on appraisal report and any bad remark will mean big problem for next contract… each time I have to go through character check where crewing manager checks my past record—any extra remark is not good for job… I am always worried about next job'.

The findings thus show a wide disparity between the perceptions of managers and seafarers in the implementation of the ISM Code and as such a considerable gap between the expected outcome of the Code and the practice. The following section offers an explanation to this disparity by investigating the main underlying causal factors that influence it.

5. Discussion

The ISM Code placed obligation on managers and in particular on Designated Persons to provide for safe practices in ship operation and a safe working environment and establish safeguards against all identified risks. Equally it required ship captains to ensure that the shipboard operations are carried out in accordance with the policies and procedures developed in SMS. The study showed that both parties felt that they played their role effectively and thus complied with the legal requirements of the Code. Yet it is evident from the study that the implementation of the Code was a failure. This conundrum needs further discussion.

5.1. Failure of the ISM Code

Managers in both companies operated the Code through a highly structured top-down system. In their interpretation they had to lay down safety procedures and ensure seafarers' compliance with them. They were convinced that their seagoing colleagues were neither much keen nor capable to comply with the Code without their strict supervision. They believed that their apathy was largely due to lack of training and their poor safety behaviour.

Driven by this line of thinking, managers placed significant focus on checking seafarers' compliance through shipboard audits and improving their personal qualities so that they could be turned into motivated and safe workers. The behavioural based programme used in one of the companies is a reflection of such interpretation. Such managerial initiatives are not unique to this study and its marginal impact on safeguarding OHS is also not a surprise [41]. Similar findings have been recorded in research conducted in shore based industries [42] (p. 61–68). As studies have demonstrated earlier [43] this approach has an inherent weakness. By trying to focus on rectifying workers' behaviour it takes the focus away from the management of workplace risk.

Although futile, this is how managers interpreted their role towards implementing the Code. Thus, it cannot be said that managers in the two organisations were oblivious to their responsibilities as per the Code but their efforts were largely misdirected. It is apparent that their style of implementing did not engender seafarers' participation. The only meaning that could be attached to participation under the formal system was mere execution of managers' instructions and orders on shipboard work procedures, which left no room for seafarers to participate in the management of shipboard health and safety. Perhaps not surprisingly, seafarers experienced implementation of the ISM Code as an imposition. To them it was a managerial tool, which merely required compliance from them and not participation in the true sense of the word. This undermined their professional seafaring skills and thus led to its rejection.

Yet seafarers did not openly express their disagreement to their managers nor did they defy the system. They demonstrated their compliance by filling logbooks and checklists the way the company's SMS required them to even when it led to falsifying entries. On paper therefore the Code was successfully implemented, which made it challenging to prove otherwise.

While that is evident the research voyages also showed that seafarers applied other measures to safeguard themselves. Their disregard for the Code had no bearing in the way in which they actually managed their safe working procedures—as though the practice of ship safety and the implementation of the Code were unrelated. The safe working skills, which seafarers claimed to have learnt through experience, were put to use for day-to-day management of shipboard safety. Thus, the final outcome in terms of ship safety was largely a reflection of how well seafarers communicated among themselves and applied their skills.

5.2. Underlying socioeconomic conditions

Nonetheless, such unhealthy practice did not promote safety. The core concern is located in the way seafarers felt compelled to accept managers' top-down stance and failed to direct their skills

and expertise in the formal management system offered under the ISM Code.

Job insecurity emerged as the most common concern from seafarers' interviews. It had a major influence in the operation of the ISM Code and was the main underlying factor, which prevented seafarers from conveying their disagreement. Seafarers' short-term contractual employment made them feel vulnerable and uncertain about their future employability. As a result they prioritised ways to keep their employment and in particular ensured that managers saw them as compliant individuals. Such employment practice was not exclusive to these two organisations but the norm across the industry [44].

This inevitably compromised OHS. The relation between job insecurity and poor OHS outcome has been highlighted in studies conducted in land-based work sectors too [45]. They corroborate the findings of this study, which showed that when 'keeping job' becomes the priority it overshadows most other work concerns including issues on OHS. Inferior work conditions including unsafe work practices in such circumstances are thus more readily accepted.

For ratings such fear was understandably even more acute because of their position in the global labour market. The ISF-BIMCO report [46] suggest that the ratio of their supply and demand is even, which meant that they were aware that many of their colleagues were waiting in the wings. They are not in as much demand as ship's officers who enjoy a shortfall of two per cent.

Ship-owners' exploitation of the global labour market and fragmentation of the maritime industry were at the heart of the weak employment conditions that seafarers find themselves in. Crucially it was caused by the lack of regulatory oversight of employment relations and a near absence of trade union support at workplace. This, as Lillie pointed out [47], prevented the seafarers from forming into an organised workforce. They therefore could not present their concerns to their managers in a representative manner and engage in collective bargaining with them for better working conditions. Studies from the wider context also show parallels of such outcome [48]. They too point out that workers from non-unionised work sectors suffer more from fear of redundancy compared to their unionised counterparts.

The lack of trust was the other concern prevalent in the companies, which is widely viewed as a facilitator of communication. It emerged as managers considered that the seafarers were not proficient or even willing to comply with the SMS. As a result they were prepared to offer only a low-discretionary role to seafarers. Likewise, seafarers showed a deep sense of scepticism towards their managers. They did not feel that their managers were taking interest in OHS and were worried that the managers were actually looking out to apportion blame on them. It exemplifies Blau's theory of social exchange [49], which argued that in workplaces where employees are required to work in an environment of low-level of institutionalised trust they too tend to reciprocate with suspicion and distrust. This provides an explanation to scepticism and the lack of trust that was evident in the study. But trust building, as Slovic pointed out [50], takes time and demands a good social relation across the organisation both of which unfortunately were absent. While intermittent work-leave arrangement is a characteristic feature of the industry the matter was exacerbated by employing seafarers on short-term contract.

In the absence of such critical social and employment conditions seafarers could not offer their insight to workplace hazard mitigation within the formal system of managing shipboard health and safety. Without their key input the objective of the Code remained largely unrealised and thus effectively failed.

6. Conclusion

The study set out to identify the effectiveness of the ISM Code by going to the field. It found a wide disparity between the perceptions of managers and seafarers in the implementation of the ISM Code and as such a considerable gap between the expected outcome of the Code and the practice. While managers believed that the Code was a managerial tool, which for the benefit of shipboard health and safety required to be imposed on their seafaring colleagues, seafarers considered it as mere regulatory exercise, which offered no room for them to participate in the management of risks that they were exposed to everyday. They felt capable of protecting themselves from such risks by applying their skills and knowledge instead which they acquired largely through experience. Nonetheless they registered their compliance with the top-down formal system, which led to bureaucratisation of the Code and effectively to its failure.

The irony, however, is that these managers not only took the necessary steps to ensure that their company was fully certified as required under the ISM Code and complied with their legal responsibilities under this piece of legislation, they even applied certain extra initiatives to promote safety in their fleet. Yet it failed to produce the desired effect. The explanation to this paradox was revealed in the discussions on seafarers' employment practices and social relations at work.

The key employment and social conditions, which promote employee participation in the management of shipboard OHS and support self-regulation theme were largely absent in the maritime context. Weak statutory oversight of employment practice and lack of trade union support were the major causes, which suppressed seafarers from participating in the operation of the Code. Instead their actions were essentially driven by fear of losing job and among them the ratings felt most expendable due to their relatively weak position in the labour market. Moreover managers' skewed interpretation of SMS being a managerial tool further aggravated the problem. It generated a low-trust environment between managers and seafarers resulting in blame and scepticism. While these were the issues specific to the two organisations studied it is unlikely that the nature of the social and employment conditions are much different in other shipping organisations. However as reported in Section 3, these two organisations possibly belonged to the higher end of spectrum thus it is likely that other organisations in the industry might be suffering from additional concerns, which were not captured in this study. This means that while this study does not claim to be representative of the industry, the findings nevertheless can be generalised—the problems revealed in the study can be regarded as prevailing.

This research hopes to offer an insight to the practice of the ISM Code, which was sought by the IMO. More studies in this area are crucial as this aspect of the industry remains seriously under-researched. Nonetheless based on the findings of this study policymakers are urged to promote the practice of looking beyond paper trail. Company as well as the Flag State auditors should be asked to investigate the actual practice of implementation of the Code including by inquiring from seafarers. Such verification is likely to reveal the true nature of seafarers' participation.

In view of this the Maritime Labour Convention [51] is a step in the right direction. It empowers both the Flag State and Port State inspectors to investigate employment and working conditions on ships and act on complaints made by seafarers. It even offers an opportunity for seafarers to convey their concerns confidentially to the inspectors. The Convention is pertinent to this study and its effectiveness in relation to OHS needs to be examined once it has been turned into a statute.

Finally, based on this study it is recommended that policymakers consider ways of improving underlying socioeconomic

conditions of seafarers. In particular, strengthening seafarers' employment condition needs urgent attention. This could be the first step towards breaking the vicious circle of lack of trust, fear, blame and scepticism.

References

[1] IMO. International Safety Management Code and Revised Guidelines on Implementation of the ISM code by Administrations. London: IMO; 2002.
[2] Lloyds List. Let seafarers light way forward on ISM Code: The effectiveness of the ISM Code requires an urgent review. Lloyd's List: 16 May 2003.
[3] Lloyds List. Back to basics. Lloyd's List: 26 July 2004.
[4] Lloyds List. Murdoch calls for ISM overhaul to put a lid on 'human error': Experts say that perfect paperwork is no barrier against accidents. Lloyd's List: 13 September 2007.
[5] Lloyds List. Wave of paperwork causes sinking feeling. Lloyd's List: 24 May 2002.
[6] Lloyds List. The ISM Code needs revitalising. Lloyd's List: 02 December 2004.
[7] Lloyds List. Too many jobs on the radar. Lloyd's List: 15 August 2005.
[8] Roberts SE, Marlow PB. Traumatic work related mortality among seafarers employed in British merchant shipping, 1976–2002. Occup Environ Med 2005;62:172–80.
[9] International Union of Marine Insurance. 2009 Statistics Archive. 〈http://www.iumi.com/index.cfm?id=7297〉 viewed: 31 March 2011.
[10] Tzannatos E, Kokotos D. Analysis of accidents in Greek shipping during the pre- and post-ISM period. Mar Policy 2009;33:679–84.
[11] Bijwaard GE, Knapp S. Econometric Analysis of Ship Life Cycles—are safety inspections effective? Report 2008-2 Published in Econometric Institute, Erasmus University Rotterdam; 2008.
[12] Lloyds List. Why vetting improves the ISM Code. Lloyd's List: 28 April 2005.
[13] Anderson P. Managing Safety at Sea. D Phil thesis, UK: Middlesex University; 2002.
[14] IMO report on the Assessment of the Impact and Effectiveness of Implementation of the ISM Code presented in the Maritime Safety Committee, 81st session; 10–19 May 2006.
[15] Saari J. Safety interventions: international perspectives. In: Feyer AM, Williamson A, editors. Occupational Injury: Risk, Prevention and Intervention. London: Taylor & Francis; 1998.
[16] Wu B, Winchester N. Crew study of seafarers: a methodological approach to the global labour market for seafarers. Mar Policy 2005;29:323–30.
[17] Ellis N. Accident and incident data. In: Proceedings of the seafarers international research centre's fifth international symposium. Cardiff: SIRC; 2007.
[18] Nielsen D, Roberts S. Fatalities among the world's merchant seafarers (1990–1994). Mar Policy 1999;23:71–80.
[19] IMCO Tanker Casualty Investigations: Report of the Tanker Accident Working Group by ICS, OCIMF and INTERTANKO. Presented at Maritime Safety Committee 46th Session Agenda No. 18. (MSC 46/18/7 26 February 1982).
[20] ICS/ISF Code of Good Management Practice in Safe Ship Operation. Presented at Maritime Safety Committee 47th Session Agenda No. 5. (MSC 47/INF.2 19 August 1982—ICS & ISF).
[21] Merchant Shipping Notices Good Ship Management, for ships under the UK registry HMSO. UK; 1987.
[22] Alderton T, Winchester N. Globalisation and de-regulation in the maritime industry. Mar Policy 2002;26:35–43.
[23] ISL Shipping Statistics and Market Review. Bremen: Institute of Shipping Economics and Logistics; Issues: 2000–2009.
[24] DeSombre ER. Flagging Standards: Globalization and Environmental, Safety, and Labour Regulations at Sea. Cambridge MA.MIT Press; 2006.
[25] M.V. Herald of Free Enterprise: Report of Court No. 8074. Formal Investigation. London: HMSO; 1987.
[26] IMO List of Conventions. 〈http://www.imo.org/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Safety-of-Life-at-Sea-(SOLAS),-1974.aspx〉 viewed 12 Aug 2011.
[27] Lillie NA. Global Union for Global Workers: Collective Bargaining and Regulatory Politics in Maritime Shipping. New York: Routledge; 2006.
[28] Alderton T, Bloor M, Kahveci E, Lane T, Sampson H, Thomas M, Winchester N, Wu B, Zhao M. The Global Seafarer: Living and Working Conditions in a Globalised Industry. Geneva: International Labour Office; 2004.
[29] Beth HL. Hader A. Kappel R. 25 Years of World Shipping. London: Fairplay Publication Ltd; 1984.
[30] Kahveci E, Nichols T. The Other Car Workers: Work, Organisation and Technology in the Maritime Car Carrier Industry. New York: Palgrave Macmillan; 2006.
[31] Lillie N. Global collective bargaining on flag of convenience shipping. Br J Ind Relat 2004;42:47–67.
[32] Lillie N. Union Networks and Global Unionism in Maritime Shipping. Ind Relat 2005;60:88–111.
[33] Walters D, Frick K. Worker participation and the management of occupational health and safety: reinforcing or conflicting strategies? In: Frick K, Jensen PL, Quinlan M, Wilthgen T, editors. Systematic Occupational Health and Safety Management: Perspectives on an International Development. Oxford: Elsevier Science; 2000.
[34] Bohle P, Quinlan M, Mayhew C. The health and safety effects of job insecurity: an evaluation of the evidence. Econ Labour Relat Rev 2001;12:32–60.
[35] Boyd C. Human Resource Management and Occupational Health and Safety. London: Routledge; 2003.
[36] Fox A. Beyond Contract: Work, Power and Trust Relations. London: Faber and Faber Limited; 1974.
[37] O'Reilly C. The intentional distortion of information in organizational communication: a laboratory and field approach. Hum Relat 1978;31:173–93.
[38] Eisenhardt KM. Building theories from case study research. Acad Manage Rev 1989;14:532–50.
[39] Paris MoU. Port State Control Annual Report; 2007. (〈http://www.parismou.org/upload/anrep/anrep2006low.pdf〉 viewed 15 Aug 2007).
[40] Oldham RC. Tanker quality: the oil industry perspective. In: Haralambides HE, editor. Quality Shipping: Market Mechanisms for Safer Shipping and Cleaner Oceans. Rotterdam: Erasmus; 1998.
[41] Bohle P, Quinlan M. Managing Occupational Health and Safety: A Multidisciplinary Approach. South Yarra: Macmillan Publishers; 2000.
[42] Nichols T. The Sociology of Industrial Injury. London: Mansell Publishing; 1997.
[43] Fahlbruch B, Wilpert B. System safety—an emerging field for I/O psychology. In: Cooper CL, Robertson IT, editors. International Review of Industrial and Organizational Psychology, vol. 14. Chichester: Wiley; 1999.
[44] ILO. The Impact on Seafarer's Living and Working Conditions of Changes in the Structure of the Shipping Industry. Geneva: ILO; 2001.
[45] Quinlan M. The implications of labour market restructuring in industrialized societies for occupational health and safety. Econ Ind Democracy 1999;20(3):427–60.
[46] BIMCO/ISF Manpower Update 2010. Institute for Employment Research. University of Warwick; 2010.
[47] Lillie NA. Global Union for Global Workers: Collective Bargaining and Regulatory Politics in Maritime Shipping. New York: Routledge; 2006.
[48] Turnbull P, Wass V. Redundancy and the paradox of job insecurity. In: Heery E, Salmon J, editors. The Insecure Workforce. London: Routledge; 2000.
[49] Blau P. Exchange and Power in Social Life. New York: Wiley & Sons; 1964.
[50] Slovic P. Trust, emotion, sex, politics, and science: surveying the risk-assessment battlefield. Risk Anal 1999;19:689–701.
[51] Maritime Labour Convention. 〈http://www.ilo.org/ilolex/cgi-lex/convde.pl?C186〉 (viewed 12 Aug 2011).