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Organisational support and safety management: A study of shipboard safety supervision

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Abstract

Shipping is a safety critical industry where operational errors may lead to maritime accidents involving property damage, loss of lives and environmental pollution. As part of the trend towards self-regulation, the International Maritime Organisation has adopted a worldwide International Safety Management Code which made ship managers responsible for workplace health and safety. This study, based on interviews in two Chinese shipping companies, examines how ship managers use ship visits to monitor shipboard safety management. Interviews with managers from company offices and crew members indicated that managerial ship visits mainly take the form of inspections that focus on low-trust surveillance and disciplinary action rather than genuine support, being based on the safe person rather than the more effective safe place approach. From the perspective of crew members, because the managers visited ships only occasionally, they were unlikely to have sound knowledge of the specific situations and work routines on their ships. Consequently, managers' interventions for safety compliance were seen by crew members as failing to address real risk factors, and leading instead to increased workloads, psychological pressure and fatigue, the very antithesis of safety management. Meanwhile a coherent, supportive system for reducing risk remains underdeveloped in the shipping industry.

JEL Codes: J81, J83, L91, M54, N75

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Introduction

Shipping is a safety critical industry where operational errors may lead to maritime accidents with consequences of property damage, loss of lives and environmental pollution. Against this background, and spurred by a few high-profile maritime accidents, particularly the tragic loss of the *Herald of Free Enterprise*, the International Maritime Organisation (IMO) adopted the International Safety Management (ISM) Code, which came into full force in 2002 worldwide. The Code is designed to promote self-regulation in shipping by making ship managers assume the responsibilities for ensuring that workplace health and safety in their individual organisations is effectively managed (Bhattacharya, 2009; Walters and Bailey, 2013). It provides a broad framework of safety management principles, based on which ship managers should design and adopt safety management systems (SMSs) that are tailored to their individual circumstances and risk profiles (Bhattacharya, 2009; Walters and Bailey, 2013). According to the Code, the managers should identify and assess health and safety hazards associated with their ship operations, put in place effective measures to eliminate, reduce or control risks, and periodically audit and review their SMSs. The Code further requires shore-based management to provide shipboard employees with sufficient support and resources, engage them in actively participating in shipboard safety management, and facilitate their upwards communication of safety deficiencies and concerns with the managers.

Despite ISM implementation, under-reporting of safety deficiencies and incidents is common in the industry (Ellis et al., 2010; Hassel et al., 2011; Luo and Shin, 2019; Psarros et al., 2010). Unsurprisingly, a considerable amount of research attention on ISM implementation has been given to the practice of incident reporting on ships, and the findings suggest that seafarers are reluctant to report any incident for fear that they might get blamed (Bhattacharya, 2011, 2012; Lappalainen et al., 2011; Oltedal and McArthur, 2011; Xue et al., 2018, 2019). Obviously, all ISM Code measures are related to shore management support and supervision. However, the issue of 'direct' management support and supervision of shipboard safety management and its impact on safety management are under-studied. Drawing on organisational support theory (OST) (Eisenberger et al., 2016; Eisenberger and Huntington, 1986; Kurtessis et al., 2017), we examine this issue with particular focus on activities which occurred during managers' ship visits.

From the social exchange perspective, OST (in the context of safety management) proposes that when employees believe that an organisation cares about and devotes resources to improving their safety and well-being, they feel obliged to adopt safety behaviour and show safety commitment (Hofmann and Morgeson, 1999; Mearns and Reader, 2008). This theory implies positive and reciprocal exchange and interaction between managers and employees. In the shipping industry, interaction between shore-based management and seafarers is mostly mediated by information and communication technology (ICT), such as satellite communication, due to the physical separation between

shore-based management and shipboard workplaces. Nevertheless, face-to-face interaction occurs occasionally when shore-based management visits their ships. Ship visits give ship managers and superintendents a good opportunity to observe real situations on ships, provide guidance and support accordingly, and show their considerations for crew members and safety in the workplace. As such, they can be seen as critical moments for shore–ship exchange. This article focuses on these hitherto unexamined moments, examining such shore–ship exchange and exploring its safety implications for ISM implementation. As this particular focus provides a unique perspective to examine ISM implementation, it makes a fresh contribution to the understanding of safety management in shipping.

Organisational support and its relationship to safety management

Basically, the concept of organisational support is embedded in the development of social exchange theory (Blau, 1964; Eisenberger et al., 2016; Gouldner, 1960; Kurtessis et al., 2017; Levinson, 1965; O'Donnell et al., 2012). Eisenberger and Huntington (1986) developed OST to investigate and explain engagement of employees in organisations. According to this theory, when employees believe that the organisation values their contributions and cares about their well-being, which is defined as perceived organisational support (POS), they feel obliged to respond in kind and repay the organisation. For example, they may increase work effort and affective commitment to the organisation, improve organisational citizenship behaviours and trust that improved performance will be rewarded (Eisenberger et al., 2016; Eisenberger and Huntington, 1986; Kurtessis et al., 2017; O'Donnell et al., 2012).

OST is developed in a general organisational context and explains socio-economical reciprocal exchange between employees and managers in organisations. In safety-related studies, similarly, employee and manager exchange and interaction are regarded as being important for safety behaviours and outcomes (Bhattacharya and Tang, 2013a; Clarke and Ward, 2006; Xue et al., 2018; Zohar, 2010). In this context, Hofmann and Morgeson (1999) applied OST to examine the links between leader–member exchange, POS and safety management issues in manufacturing plants. Their findings indicated that both leader–member exchange and POS encouraged employees to engage in safety-related communication which in turn increased employee safety commitment. Their research further indicated that as a result of increased safety communication and commitment, accidents at the workplace decreased. Similarly, Mearns and Reader (2008) conducted a survey in the UK offshore oil and gas industry and found that POS (in the form of positive perceptions of organisational, supervisor and workmate support for health) led to reciprocal safety behaviours by employees. Such safety behaviours included monitoring the safety behaviours of colleagues, correcting safety deficiencies and informing management about safety problems, near misses and incidents.

In industrial safety studies, a distinction has been made between the safe person approach and the safe place approach. The safe person approach places significant emphasis on employee behaviour and attitude, focuses on training and strict supervision, and aims to identify weaknesses of individual workers as primary causes of accidents (Frick and Wren, 2000; Gunningham and Johnstone, 2000; Reason, 2000; Wokutch and VanSandt,

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2000). Instead of targeting and blaming individuals, the safe place approach starts from the premise that humans are fallible and that human errors are to be expected. It focuses on the conditions under which individuals work and stresses the importance of creating a safe working environment where employers provide sufficient resources to build up defences to prevent errors or mitigate their effects (Bhattacharya, 2009; Frick and Wren, 2000; Gunningham and Johnstone, 2000; Reason, 2000; Wokutch and VanSandt, 2000).

The safe place approach also relies on interaction between employees and managers. In this approach, employers demonstrate their commitment to safety by providing adequate resources and encourage employees to actively participate in safety management. As employees have an intimate knowledge of their workplaces and potential hazards therein, their participation, such as promoting the safety programme within the workplace, demonstrating initiatives, correcting safety deficiencies and communicating to management about safety problems (Inness et al., 2010; Neal et al., 2000), is essential for workplace safety (Gunningham, 2008). According to Hofmann and Morgeson (1999) and Mearns and Reader (2008) as discussed above, employees' active participation is driven by POS and positive leader–member exchange. Thus, it can be said that POS and reciprocal exchange between employee and manager are integral elements in the safe place approach.

In the shipping industry, the ISM Code requires commitment from the top management of a shipping company and stipulates that the management should provide adequate resources and support to safeguard shipboard safety. It also requires the company to put procedures in place which enable seafarers to participate in identifying, assessing and mitigating risks and report safety deficiencies and problems. As such, the Code in theory promotes a safe place approach. ISM implementation has attracted a considerable amount of research attention since its adoption in the late 1990s. Studies taking quantitative approaches in general suggested positive safety outcomes. For example, Tzannatos and Kokotos (2009) and Kokotos (2013) found that ISM implementation led to a continuous and statistically significant decrease in the rates of accidents induced by human error in the Greek fleet. More recently, Pantouvakis and Karakasnaki (2016, 2018) found that top management commitment was positively related to ISM implementation effectiveness, which in turn enhanced customer satisfaction and the financial performances of shipping companies. By contrast, studies taking qualitative approaches revealed various problems associated with ISM implementation, including reluctance to report safety deficiencies (Bhattacharya, 2011, 2012; Lappalainen et al., 2011; Xue et al., 2018, 2019), excessive paperwork and bureaucratisation (Bhattacharya, 2012; Bhattacharya and Tang, 2013b), and the existence of a blame culture and distrust between the management and crew (Bhattacharya, 2012; Sampson et al., 2016, 2019). This body of qualitative research further indicated that in practice managers took a behaviour-based safety management approach (Bhattacharya, 2011, 2012; Walters and Bailey, 2013). Taken together, these two sets of findings reveal two interrelated points. First, the safe place approach as encouraged by the ISM Code has not been effectively established yet in the industry. Second, to reap more benefits of ISM implementation, there are still underlying barriers to overcome.

Unlike other industries, the shipping industry is characterised by physical separation between shore-based management and shipboard workplace, and the physical distance

between the shipboard workplace and shore-based management may aggravate the problem of distrust between seafarers and shore-based management. However, ship managers or superintendents also carry out occasional ship visits when their ships are berthed at port. According to the ISM Code, shipping companies should conduct safety audit on board ships at least once every twelve months to ensure that the SMS functions properly. Such visits present an opportunity to establish face-to-face interaction between ship managers and seafarers. Though far from frequent, they are critical moments for POS, because only on these occasions are ship managers and superintendents able to observe real situations on board. This article focuses on these moments and examines managers' safety management activities during their ship visits and seafarers' responses. It serves to reveal hidden barriers to effective safety management in shipping.

Research methods

The study was conducted in two Chinese shipping companies in recent years. In order to avoid potential inconsistency in interpreting data and for the convenience of cross-reference, the two companies, which share similar features in terms of their fleets, crew teams and trade patterns, were specially selected for the study. Both companies mainly operate chemical tankers. Since chemical tankers could cause serious marine pollution and environmental damage if an accident occurs, they are subject to more stringent external inspections and thus should have a better safety record as compared with dry bulk and general cargo carriers (Bhattacharya and Tang, 2013b; Xue et al., 2018). Therefore, it can be justified that chemical tanker shipping companies should pay more attention to and invest more resources in safety management.

Both companies are headquartered in the Yangtze Delta Region in East China. Each of them operated about 20 chemical tankers and most of them sail between ports in China and those countries around the West Asia Pacific region. Both companies were managed by Chinese managers and their ships were manned by Chinese crews. In general, the shore management of both companies was able to visit ships in ports in China at several months' intervals.

The study focused on shore management as well as crew members in the two companies. The first stage of the study was carried out in the offices of the two companies. Semi-structured interviews were conducted with 14 managers and superintendents (their ranks and sea qualifications are illustrated in Table 1). The second stage of the study was conducted with crew members while the fieldwork researcher sailed on four ships for four voyages, two ships from each company, respectively. In total, the researcher spent 45 days on ships, and conducted 55 semi-structured interviews with crew members of all ranks. The interviewees basically covered a typical hierarchical structure of a ship, as shown in Figure 1. Interview questions were categorised into different topic areas that were related to implementation of the ISM Code. Of particular relevance to this article were management's safety inspection on board ships, its outcomes and impacts on the crew and shipboard safety practices. During the sailing voyages, the field researcher also had informal talks with crew members, observed their routine work practices and took field notes. These activities helped the researcher establish rapport with the interviewees and gain a good understanding of safety management on ships. The interviews were

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Table 1. Shore-based management interviewees.

Company 1 (C1)	Company 2 (C2)
Vice general manager (safety)	Vice general manager (safety)
Maritime affairs manager	Safety and quality manager
Maritime affairs superintendent	Maritime affairs manager
Marine engineering manager	Maritime affairs superintendent
Marine engineering superintendent	Marine engineering manager
Quality and safety superintendent	Marine engineering superintendent
Crewing vice manager	Crewing vice manager

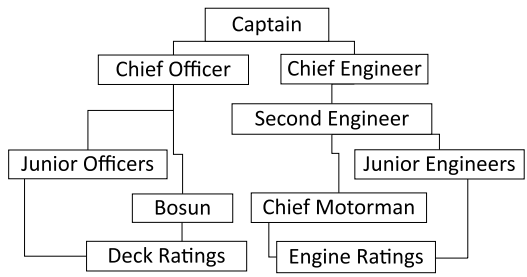

Figure 1. Typical shipboard hierarchy.

initially conducted in Chinese, but were transcribed into English at a later stage by the researcher. For ethical reasons, neither company names, nor ship names, nor individual names were mentioned. All the data were coded with the aid of Nvivo software. The codes were further categorised and a tree structure diagram was produced to visualise the relationships among codes and categories.

A skewed focus on surveillance inspection

The role of workplace safety tours is important in the safety management of an organisation. It involves the management or their representatives routinely walking around workplace to appraise working conditions and safety practices, monitor whether safety systems function properly, identify deficiencies or areas for improvement and make appropriate corrective actions to make things work as per the set standards and procedures. In shipping, a workplace safety tour means a ship visit. As required by the ISM Code, a shipping company should carry out internal safety audits on board at intervals to verify whether safety and pollution prevention activities are carried out accordingly, and should periodically evaluate the effectiveness of the SMS in accordance with procedures established by the company.

In the two companies, ship visits were carried out by managers or superintendents responsible for the safe operation and management of ships. A visit commonly took place when one of their ships called at a domestic port, and it was also possible at a foreign port

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where it was necessary. There was a consensus among the management of both companies that ship visits were indispensable, and that the management was committed to shipboard safety management.

Understandably, managers saw the physical distance between shore and ship as a significant barrier that could affect mutual communication as well as supervision. A safety and quality manager expressed this common perception:

> Technology-based communication has limitations. We don't work together with crew. What they say might not be the same as what they do in reality. Some of them may be very good at talking, but in practice their performance would be different to what they claimed. This is a common phenomenon.

According to the requirements of the SMSs of both companies, work records should be kept on board, and on many occasions they should also be reported to the shore management. These records serve as evidence of what and how work has been done on board. The above quotation suggests that managers did not trust such records. The managers felt that it was not sufficient for them to judge work done on board by reading reports. As such, ship visits provide the opportunity to check and verify if the crew have done their work properly, as stated by a marine engineering superintendent:

> It's impossible to know the fact just from the paperwork. The role of a ship visit is prominent. The company requires the managers to visit ships regularly to judge whether the paperwork is true, or the expected outcome has been achieved.

These words indicate a sense of doubt or even distrust. Considering the distance between shore and ship and the inability of managers to observe the shipboard workplace directly on a daily basis, such doubt is not surprising.

When managers came on board ships, they would usually carry out general inspections of the ship conditions as well as talk with some crew members. The inspections helped them check the performance of the crew, and the talks enabled them to obtain information about the crew's work attitudes, as suggested by managers from both companies:

> When I was on board the ship, I can understand the situation in a way which was impossible in the shore office. The crew's performance, attitudes, outcome, sense of responsibility . . . they all can be understood. (A quality and safety superintendent)

> When I was on board, I would try my best to talk with them (crew members) as much as possible. I could understand the situation by free chatting with them. I could obtain first-hand information through on-the-spot communication. (A marine engineering manager)

These words suggest that ship visits could be opportunities to re-establish trust as managers and the crew could communicate with each other directly as well as demonstrate what had been done and what the real situation was. Nevertheless, the first quotation also indicated that the manager focused more on individual attitude and behaviour. Evidence below further demonstrates this. When visiting ships, managers also focused

on teamwork on board. They understood that teamwork was one of the essential factors that could affect ship's safety. Without good teamwork, according to a marine engineering manager, 'the shipboard condition and environment would be very messy'. If conflicts among some of the crew members were made known to visiting managers, these conflicts would be dealt with seriously and immediately. A marine engineering manager presented his view on this:

> Everybody is different. Some crew members lack of a sense of responsibility. If we observe or hear that there is a conflict among them, we would solve it at the earliest possible time. If we have tried and little improvement is made, we would change some of them. We would try our best to get them to work together.

Apart from the concern of teamwork, individual crew members were also investigated by the management. For example, a marine engineering superintendent explained,

> I would talk to them individually, trying to understand whether their thoughts and mental states were stable. Otherwise, safety on board would be seriously affected.

Another superintendent further added,

> If someone had prejudice against us, his mental state would be unstable and unbalanced. This certainly would have a negative impact on his work.

Owing to various factors, such as long-term separation from families, living in confined space, stress, fatigue and limited shore leave, seafarers are susceptible to poor mental health (Iversen, 2012). The above quotations indicate that managers were aware of this issue and would care about crew's mental status which could negatively affect shipboard safety.

More importantly, the purpose of ship visits was to check and assess the crew's work performance and outcomes. This was evidenced by the use of the word 'check' or 'inspection', which was frequently quoted during the interviews. A maritime affairs manager talked about his work on board:

> We would check whether the crew's work conformed to the company's requirements, national and international regulations, or industrial guidelines. We would not know the situation until we had carried out an inspection.

Another manager explained why 'check' and 'inspection' were important:

> Like a kid doing homework . . . If we do not go to check, we could not know whether the recorded work has been completed or whether the records are correct. If the crew know that we would often check, they would make better and neater records. If they only make records without doing the maintenance, we would find this out by checking the equipment and know that their records are false.

Again, these quotations indicate a sense of distrust. Furthermore, the crew members in charge of the safety equipment were involved in the process of safety inspection, and

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they were usually asked to be there on spot for questions. If a problem was identified by a visiting manager, the one who was responsible for that would be required to give explanations. A marine engineering superintendent described such a situation:

> We would communicate with the crew during the inspection, letting them acknowledge that it is true they have not performed well. This plays an active role in improving their work. It is also the purpose of the management.

In extreme cases, the crew involved could be sacked unconditionally if evidence of incompetence or lack of responsibility was identified, as was specifically mentioned by managers as well as superintendents in both companies. For example, a maritime affairs superintendent said,

> If we found problems, we would take corresponding measures, giving criticisms or instructions or suggesting a change of personnel.

Overall, the data suggest that during ship visits, shore managers focused on checking surveillance approach: checking individual attitudes and mental states, checking teamwork and relationships among crew members, and checking the outcome of the crew's work against the required standards. The quotations reveal a sense of distrust in accordance with previous research (Bhattacharya, 2012; Sampson et al., 2016, 2019); the word 'support' was hardly mentioned. So far, the study indicates that managers tended to take a safe person approach, with the focus and purpose of ship visits being skewed towards identifying the crew members' proper attitudes or behaviours with the hope of enforcing their safety compliance. Next, we turn to the crew on board ships and examine their responses to shore managers' ship visit activities.

Performance appraisal and stressors

On board the four ships in this study, one interview question related to what the shore management did during their ship visits. An immediate response from many of them was 'one word: inspection', which was consistent with what the shore managers described in the interviews. Furthermore, from the crew's perspective, one function of managers' visits and inspections was to appraise and assess their performance. For example, a third officer said,

> Whether you perform well or not, it's up to them (shore management); they give your performance appraisal.

When an inspection was complete, a ship-visit report would be produced by the visiting managers. A captain described how it worked,

> The ship-visit report is clear-cut . . . What does the ship's condition look like? How about the crew performance? Do they comply with the rules? Their bonus would be affected by the report. If they did not perform well, they could not explain or argue. Otherwise, the visiting manger could further lower their performance marks.

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Furthermore, the inspection results could affect a crew member's prospects for promotion. In order to be promoted to a higher position, a crew member needs to have a corresponding Certificate of Competence (CoC). The China Maritime Safety Administration is responsible for organising national seafarer qualification examinations regularly and issues CoCs to those who pass the corresponding examinations. In C1, the arrangement for the crew's training and examinations was made by the managers of the company. In the understanding of the crew members, the managers tended to give priority to those whose appraisal results were satisfactory, as a second officer stated in the interview:

> If you fail to do well and it is found out, this would affect management's consideration for the arrangement of your certificate-upgrading exams. It would affect your promotion. They are all relevant.

More directly, a bad appraisal would mean no promotion even though a crew member possessed the CoC of a higher rank. For instance, a senior engineer gave the following reason:

> If a senior officer fails to perform well, it is impossible for him to be promoted to be a captain or chief engineer. A superintendent has the power to decide that a person could not be a captain on a ship supervised by him.

In extreme cases, as mentioned in the previous section, a crew member might be dismissed by the visiting manager if evidence showed that he lacked a sense of responsibility. An example was given by a bosun,

> Last time, when a superintendent visited the ship, a third officer was found dosed off in the cabin when he was on duty. At that time, the ship was loading cargo. He was deemed to be irresponsible and was asked to leave by the superintendent.

Given the potential consequences, the crew members inevitably felt added pressure whenever there was a ship visit by shore management, which was described by a third officer:

> After all, they are the officials from the shore base. First, they will carry out inspection; second, they will conduct supervision. For us, no matter how well or badly we perform, we will have pressure.

A chief officer told of one occasion when his ship called at a port adjacent to his company:

> It was near the company that time. The senior managers might come to visit the ship. We were very busy, washing the deck again and again. We would definitely do the cleaning work thoroughly. The work relating to hygiene in public areas or cabins had to be completed.

Clearly, the crew believed that it was essential to leave company's visitors a good impression of the appearance of their ship, since the ship's appearance could reflect the

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quality of the crew's work. This belief corresponded with the managers' view that good ship conditions and environment reflected good teamwork. As senior officers had more responsibilities, they bore more pressure than junior officers and ratings, as noted by a second officer:

> All the senior officers have immediate responsibilities over part of ship's equipment or certain types of work. When there is a ship visit, the higher the position the one has on board, the more pressure he will bear.

Mismatched support and gaps

As mentioned earlier, in interviews with managers regarding a ship visit, the word 'support' was rarely mentioned. The interviews with crew members suggest that the managers' ship visits did not help improve much of the crew's work. First of all, according to crew interviewees, ships were different from one another, and each ship had its own particularities. Even if a manager or superintendent had worked on board before and had rich experiences, he might not be familiar with the particularities of a ship under his supervision. In this sense, it could diminish the management's supporting role. As a second engineer put it,

> Except in the case of a manager having worked on this ship before and being very familiar with this ship, otherwise, he has to listen. In practice, all the work is done by the crew on this ship.

Also, some senior officers with many years of sea experience thought they did not need a manager's technical support. For example, a chief engineer said,

> If you expect them [managers] to solve any particular technical problems, it is impossible. Mainly, we depend on our own [skills]. I have been a chief engineer for six years. It's very rare that shipboard practical problems have been solved by them.

Due to these reasons, some senior officers believed that a manager was no better than themselves in solving shipboard-specific technical problems. As a second engineer stated,

> For me, they [managers] are useless for helping my work. If I can solve a problem, I do not need their guidance; if I cannot, they would not be able to work it out either.

The above quotations do not mean that managers could not provide any support during their ship visits. Although they might not be able to help solve technical problems, they were in a position to provide other forms of supports. A second engineer pointed out,

> We need them to coordinate work between the management office ashore and suppliers of various equipment and spare parts so that the correct spare parts, information and technical documents could be provided to us. We do not have any channel to obtain them. I think this is the most helpful work for us.

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Among the various kinds of support that were thought helpful, arrangement of technicians for repair work, provision of safety information, and supply of materials and spare parts were highlighted by crew members. While visiting a ship, a manager or superintendent would be able to see directly what spare parts were needed and what repair work was beyond the crew's capacity but needed to be done by professional technicians ashore. The crew hoped that these could be arranged by the visiting managers.

However, the crew did not think they received such support sufficiently. For example, on a C1 ship, there was only one Ullage–Temperature–Interface (UTI) metre (a device for measuring the height and temperature of liquid cargo in a tank) on board; on one ship of C2, some pipes were rusted and needed to be replaced. According to regulations as well as the SMSs, a chemical tanker should carry a few UTI metres. In both cases, even though the crew reported the problems to the companies and the visiting managers also saw the situations, the ships were not provided with extra metres or new pipes for replacement. The lack of supplies caused considerable inconvenience and additional workloads to the crews, as a chief engineer explained:

> They [the management] want to spend less and earn more. The crew then have to work harder. A heavy workload is imposed on us. We do what we should do; we also have to do what we are not supposed to.

Thus, it can be seen that the focus of managers' ship visits was more on inspection than provision of required support. Moreover, the crew commented that this focus led to disruptions of their normal working rhythm. For example, a third engineer explained,

> I do not expect the management's visit. If they came, my work plan would be disrupted. Then I must shift my focus to their inspections. If they see a valve plate is missing, they would ask me to fix it immediately. My view is that, first of all, I must guarantee equipment safety. For the tasks that impact little on safety, I would rather leave them aside for a later stage. But when they come, they would treat those superficial things as real problems. As a result, my work arrangement would be disrupted.

Similarly, a second engineer described his experience during a ship visit:

> I was doing my work according to my plan. The problems could not be solved simultaneously. At that time, a manager came; he saw the workplace and asked, 'Why didn't you do this and that?' He thought my work was a mess. In fact, I was busy with maintenance on the main engine. Obviously I could not solve all the problems at the same time, but I had my own plan. At that time, my work plan was completely messed up.

Although this second engineer tried to explain the situation to the visiting superintendent, it was of little use. This was consistent with what many of the crew members commented: visiting managers came on board to inspect and give orders, not to elicit crew members' suggestions or opinions.

Because of this particular focus on inspection, junior officers and ratings in particular seemed reluctant to communicate with visiting mangers. They felt that since the managers mainly came to inspect their work, it was better not to say too much in case they said something wrong, as indicated in the following interview with a chief motorman:

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> I don't want to chat with them to be honest. Sometimes, if we speak more, it is worse than if we speak less. . . . There is not much common ground between us. We do more work while speaking less. I feel it would be safe like this.

The above discussion suggests that from the perspective of the crew, visits from managers were more like a nuisance. Not only were their working plans disrupted but also they had to work harder to make preparations for the management's visit, which added more workload on them. Fatigue has been a well-recognised and serious problem in shipping for a long period of time (Bhattacharya and Tang, 2013b; Tang and Bhattacharya, 2018; Xue et al., 2017). This problem is often exacerbated during a ship's port stay by various demands on seafarers: berthing operations, cargo operations, inspections from various authorities, taking in ship supplies and accommodating ship visitors including managers and superintendents (Sampson et al., 2016). In this study, the crew similarly complained that managers' visits caused lots of stress and fatigue on them. A few days before arriving at a port where a visit was planned, the crew normally tensed up and had to do more overtime work to get things ready; when they arrived at the port, they had to accommodate the visiting managers and make corresponding corrections upon the managers' request which left them very limited time to rest. As a result, many crew members expressed their preference for 'sailing out at the seas and oceans' where they had time to relax and were able to do their work according to their routine and plan.

Concluding discussion

To effectively manage safety in shipping, the ISM Code puts responsibilities on shipping management companies to provide shipboard employees with sufficient resources and support and to supervise the implementation of shipboard safety management. It promotes a safe place approach and encourages positive and reciprocal interaction between managers and employees.

Owing to the physical distance between ships and shore-based management, occasional ship visits are good opportunities for shore managers to fulfil these responsibilities directly and to ensure good safety management on their ships. From the perspective of the crew, during ship visits, the managers were in a better position to provide support in terms of coordinating supplies of information and spare parts, as well as arrangements of equipment repairs by shore-based technicians. In practice, however, the expectation of the crew was unmet because the managers tended to be more concerned about costs rather than safety.

Furthermore, while the shore managers of both companies highly valued the opportunity of ship visits, they held a common view that if crew's performance was not assessed, they would be less likely to comply with safety rules and guidelines. From the point of view of crew members, the ship visits were characterised by safety supervision with a misplaced focus on the crew's performance appraisal. Nevertheless, they had to respond to managers' visits in a way expected by managers because their bonuses, promotions and even jobs were likely to be affected. This reflected a safe person approach and ship visits were used to examine the behaviours and attitudes of the crew.

As managers only visit ships occasionally rather than routinely, they might not have a sound knowledge of the visited ships or be aware of work routine on ships. By contrast,

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it is pointed out that crew members have an intimate knowledge of their workplace and its potential safety issues, and also have the most direct interests in safeguarding workplace safety (Bhattacharya and Tang, 2013a, 2013b; Gunningham, 2008). In this study, apparently, visiting managers largely disregarded the knowledge and opinions of crew members when issuing orders and establishing control over shipboard work practices. They relied on their own judgements, based on what they saw and believed, leaving limited room for seeking or listening to what the crew members' thought or suggestion on how the management should have behaved. One obvious consequence was that junior crew members tried to avoid communication with the managers. The other consequence was more serious for safety management: by issuing instructions, visiting managers interrupted the crew's work plans and this led to increased workloads, pressure, and fatigue, the very antithesis of safety management.

From the perspective of OST (Eisenberger et al., 2016; Eisenberger and Huntington, 1986; Hofmann and Morgeson, 1999; Kurtessis et al., 2017; Mearns and Reader, 2008), positive POS begets reciprocal upwards and downwards communication. In this study, the crew members felt stress instead of support in their interaction with visiting managers. As a consequence, junior crew members were reluctant to make constructive communication with the visiting managers and ship visits were not properly justified to be essential and necessary in their views; they were largely regarded as a nuisance by the crew.

The evidence thus suggests that ship managers did not take the advantage of ship visits to fulfil their responsibilities to provide the crew with sufficient resources and support or to monitor the implementation of shipboard safety management. Instead of taking a safe place approach and fostering positive employee–manager exchange as suggested by OST, the visiting managers tended to take a safe person approach, focusing on identifying and taking disciplinary action against bad performers.

As the shipping industry is characterised by physical distance between shore-based management and the shipboard workplace, ship managers may not be able to develop an adequate knowledge of specific shipboard workplaces. In this context, a safe person approach not only serves to block employee participation, but also results in arbitrary interventions, which in turn lead to unsafe work practices. This latter point unveils the unintended effects that can be caused by the safe person approach. It also implicitly brings to the surface the benefit of employee participation in safety management – if the managers encouraged explanations and suggestions from crew members, they would probably develop a better understanding of the situations and make fewer interventions. Although this article only focuses on two Chinese shipping companies, this insight about unintended effects is relevant to the whole shipping industry including offshore oil, gas and deep-sea mining sectors.

Given that effective ISM implementation can enhance competitiveness and financial performances of shipping companies (Pantouvakis and Karakasnaki, 2016, 2018), the practical implications of this study are also industry-wide: as ship visits are critical occasions in nurturing POS, ship managers should take full advantage of these opportunities to seek suggestions from the crew and to find out what support is genuinely necessary for safe operation of their ships. Monitoring is indispensable, but when non-compliance is identified, the focus needs to be on finding out why it occurred rather than blaming individuals.

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References

Bhattacharya S (2009) *The impact of the ISM Code on the management of occupational health and safety in the maritime industry*. PhD Thesis, Cardiff University, Cardiff.

Bhattacharya S (2011) Sociological factors influencing the practice of incident reporting: the case of the shipping industry. *Employee Relations* 34(1): 4–21.

Bhattacharya S (2012) The effectiveness of the ISM Code: a qualitative enquiry. *Marine Policy* 36(2): 528–535.

Bhattacharya S and Tang L (2013a) Middle managers' role in safeguarding OHS: the case of the shipping industry. *Safety Science* 51(1): 63–68.

Bhattacharya S and Tang L (2013b) Fatigued for safety? Supply chain occupational health and safety initiatives in shipping. *Economic and Industrial Democracy* 34(3): 383–399.

Blau PM (1964) *Exchange & Power in Social Life*. New York: Wiley.

Clarke S and Ward K (2006) The role of leader influence tactics and safety climate in engaging employee safety participation. *Risk Analysis* 26(5): 1175–1185.

Eisenberger R and Huntington R (1986) Perceived organisational support. *Journal of Applied Psychology* 71(3): 500–507.

Eisenberger R, Malone GP and Presson WD (2016) *Optimizing Perceived Organizational Support to Enhance Employee Engagement*. Society for Human Resource Management and Society for Industrial and Organizational Psychology. Available at: www.shrm.org/hr-today/trends-and-forecasting/special-reports-and-expert-views/Documents/SHRM-SIOP%20Perceived%20Organizational%20Support.pdf (accessed 30 June 2019).

Ellis N, Bloor M and Sampson H (2010) Patterns of seafarer injuries. *Maritime Policy & Management* 37(2): 121–128.

Frick K and Wren J (2000) Reviewing occupational health and safety management – multiple roots, diverse perspectives and ambiguous outcomes. In: Frick K, Jensen PL, Quinlan M, et al. (eds) *Systematic Occupational Health and Safety Management: Perspectives on an International Development*. Amsterdam; New York: Pergamon, pp. 17–42.

Gouldner AW (1960) The norm of reciprocity: a preliminary statement. *American Sociological Review* 25: 161–178.

Gunningham N (2008) Occupation health and safety, worker participation and the mining industry in a changing world of work. *Economic and Industrial Democracy* 29(3): 336–361.

Gunningham N and Johnstone R (2000) The legal construction of OHS management systems. In: Frick K, Jensen PL, Quinlan M, et al. (eds) *Systematic Occupational Health and Safety Management: Perspectives on an International Development*. Amsterdam; New York: Pergamon, pp. 125–148.

Hassel M, Asbjornslett BE and Hole LP (2011) Underreporting of maritime accidents to vessel accident databases. *Accident Analysis & Prevention* 43(6): 2053–2063.

Hofmann DA and Morgeson FP (1999) Safety-related behavior as a social exchange: the role of perceived organizational support and leader–member exchange. *Journal of Applied Psychology* 84(2): 286–296.

Inness M, Turner N, Barling J, et al. (2010) Transformational leadership and employee safety performance: a within-person, between-jobs design. *Journal of Occupational Health Psychology* 15(3): 279–290.

Iversen R (2012) The mental health of seafarers. *International Maritime Health* 63: 78–79.

Kokotos DX (2013) A study of shipping accidents validates the effectiveness of ISM-Code. *European Scientific Journal* 9(19): 387–392.

Kurtessis JN, Eisenberger R, Ford MT, et al. (2017) Perceived organizational support: a meta-analytic evaluation of organizational support theory. *Journal of Management* 43(6): 1854–1884.

Lappalainen J, Vepsalainen A, Salmi K, et al. (2011) Incident reporting in Finnish shipping companies. *WMU Journal of Maritime Affairs* 10(2): 167–181.

Levinson H (1965) Reciprocation: the relationship between man and organization. *Administrative Science Quarterly* 9: 370–390.

Luo M and Shin SH (2019) Half-century research developments in maritime accidents: future directions. *Accident Analysis and Prevention* 123: 448–460.

Mearns KJ and Reader T (2008) Organisational support and safety outcomes: an un-investigated relationship? *Safety Science* 46(3): 388–397.

Neal A, Griffin MA and Hart PM (2000) The impact of organizational climate on safety climate and individual behavior. *Safety Science* 34(1–3): 99–109.

O'Donnell M, Ananda KL, Jayawardana AKL, et al. (2012) Organisational support and employee commitment in Sri Lanka. *The Economic and Labour Relations Review* 23(1): 125–142.

Oltedal HA and McArthur DP (2011) Reporting practices in merchant shipping, and the identification of influencing factors. *Safety Science* 49(2): 331–338.

Pantouvakis A and Karakasnaki M (2016) An empirical assessment of ISM Code effectiveness on performance: the role of ISO certification. *Maritime Policy & Management* 43(7): 874–886.

Pantouvakis A and Karakasnaki M (2018) The human talent and its role in ISM Code effectiveness and competitiveness in the shipping industry. *Maritime Policy & Management* 2018(2): 1–16.

Psarros G, Skjong R and Eide MS (2010) Under-reporting of maritime accidents. *Accident Analysis & Prevention* 42(2): 619–625.

Reason J (2000) Human error: models and management. *British Medical Journal* 320(7237): 768–770.

Sampson H, Acejo I, Ellis N, et al. (2016) The relationships between seafarers and shore-side personnel: an outline report based on research undertaken in the period 2012-2016. Available at: www.sirc.cf.ac.uk/Uploads/Publications/The%20relationships%20between%20seafarers%20and%20shore-side%20personnel.pdf (accessed 30 June 2019).

Sampson H, Turgo N, Acejo I, et al. (2019) 'Between a rock and a hard place': the implications of lost autonomy and trust for professionals at sea. *Work, Employment and Society* 33: 648–665.

Tang L and Bhattacharya S (2018) Beyond the management–employee dyad: supply chain initiatives in shipping. *Industrial Relations Journal* 49(3): 196–210.

Tzannatos E and Kokotos D (2009) Analysis of accidents in Greek shipping during the pre-and post-ISM period. *Marine Policy* 33(4): 679–684.

Walters D and Bailey N (2013) *Lives in Peril: Profit or Safety in the Global Maritime Industry?* Basingstoke: Palgrave Macmillan.

Wokutch RE and VanSandt CV (2000) OHS management in the United States and Japan: the DuPont and the Toyota models. In: Frick K, Jensen PL, Quinlan M, et al. (eds) *Systematic*

Occupational Health and Safety Management: Perspectives on an International Development. Amsterdam; New York: Pergamon, pp. 367–387.

Xue C, Tang L and Walters D (2017) Who is dominant? Occupational Health and Safety management in Chinese shipping. *Journal of Industrial Relations* 59(1): 65–84.

Xue C, Tang L and Walters D (2018) Decoupled implementation? Incident reporting in Chinese shipping. *Economic and Industrial Democracy*. Epub ahead of print 7 March 2018. DOI: 10.1177/0143831X18758175.

Xue C, Tang L and Walters D (2019) Occupational health and safety indicators and under-reporting: case studies in Chinese shipping. *Relations Industrielles/Industrial Relations* 74(1): 141–161.

Zohar D (2010) Thirty years of safety climate research: reflections and future directions. *Accident Analysis and Prevention* 42: 1517–1522.

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