Who Is Dominant? Occupational Health and Safety Management in Chinese Shipping

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Abstract

This paper investigates the implementation of the International Safety Management (ISM) Code in the Chinese chemical shipping industry. In particular, it examines the tension between management focus on speedy production and seafarers' participation in safety related decision making and analyses how this tension is managed. It shows that while on paper companies have policies stating safety commitment in compliance with the ISM Code, in practice shore management tends to prioritise efficient production. When Occupational Health and Safety (OHS) and ship's sailing schedules are in conflict, managers implicitly request shipmasters to prioritise the 'core interest' of the company. Although the ISM Code endows shipmasters with overriding authorities in relation to shipboard safety management, they tend to read between the lines and tacitly follow managers' intentions. The study suggests that if the ISM implementation makes a difference, it is the practice that managers become more subtle in giving orders to exert their dominance. The study further reveals that the management's practice is not only irresponsive to seafarers' safety concerns but also makes rather limited contributions to promote OHS Management.

Keywords: OHS Management; ISM Code; Employee Empowerment and Participation; Managerial Dominance; Chinese Chemical Shipping

Introduction

Over the past decades, there have been a growing number of organisations which have adopted a system based approach to Occupational Health and Safety (OHS) management (Quinlan and Mayhew, 2000), and the focus on systematic OHS management within organisations has become the *leitmotif* of current OHS regulation and practice (Walters, 2005). The study of its effects has been noted in parallel with the implementation of OHS management systems in various industries (Nichols and Tucker, 2000; Walters, 2005; Robson *et al.*, 2007). This paper focuses on OHS management in the shipping industry, which is usually characterised by higher than average occupational injury and mortality rates (Hansen 1996; Roberts and Marlow 2005; Borch *et al.*, 2012). The introduction of the International Safety Management (ISM) Code in 1998 marked the starting point in the industry towards a system-based management approach, and shipping companies subject to the requirement of the Code around the world have accordingly implemented the Code and adopted Safety Management Systems (SMSs), which paved the way toward OHS management in international shipping.

In organisational contexts, there is a large body of literature in relation to systematic OHS management which suggests that employee participation is essential for effective OHS management (Frick *et al.*, 2000; Quinlan and Mayhew, 2000; Walters, 2004; Gunningham, 2008). Employee engagement is also highlighted in some of the major OHS legislations [see European Council Directive 89/391/EEC (EEC, 1989)]. This is because being at the frontline, employees have an intimate knowledge of their workplaces and potential hazards and also have the most direct interest in safeguarding workplace health and safety. Empirical research in various workplace settings has repeatedly shown that effective employee participation leads to significantly reductions in injury rates (Nichols *et al.*, 1995; Reilly *et al.*, 1995; Shannon *et al.*, 1996 and 1997; Shannon, 1998; Walters and Nichols, 2007). While the research literature on the effectiveness of the ISM Code in safeguarding seafarers by OHS management is

limited, there has been a large body of literature on systematic OHS management addressing the role of employee participation in effective OHS in land-based industries (Larsson, 2000; Mouritsen and Larsen, 2005; Humphreys, 2007; Robson *et al.*, 2007; Kamp, 2009).

It has also been suggested that there is a tension between management's focus on employee participation and production enhancement. Research in the automobile industry has revealed that management often prioritises production and merely pays lip service to employee empowerment (Vidal, 2007a and 2007b; Stewart *et al.*, 2009; Jones *et al*., 2013). An intriguing question arising, therefore, is how this tension is played out and managed in the context of OHS management in the shipping industry. This paper aims to address this issue by examining the effectiveness of the ISM Code in the Chinese chemical shipping industry. We will first discuss the theoretical focus of the paper – the tension between employee empowerment and production enhancement, and then review the previous research on ISM implementation, in particular the Chinese situation. Following a description of the research method, we present the research findings which suggest that, despite the ISM requirements, employee participation and safety assurance are likely to be sidelined when they are in conflict with management's goal of efficient production.

The Tension between Employee Empowerment and Production Enhancement

There is a large body of literature which demonstrates that employee empowerment has a positive effect on job satisfaction and organisational commitment (Fernandez and Moldogaziev, 2013; Kim and Fernandez, 2015; Ogbonnaya and Valizade, 2015), and improves job performance (Fernandez and Moldogaziev, 2011 and 2013). Despite these benefits, however, a number of studies in the automobile industry have also pointed out a big gap between management rhetoric and reality regarding employee empowerment (Vidal 2007a; 2007b; Stewart *et al.*, 2009; Jones *et al*., 2013). Having

reviewed the relevant literature, Jones *et al.* (2013) concluded that employee involvement and voice in various automobile plants were effectively silenced if they were in conflict with cost reduction and production enhancement, despite claims of employee empowerment by management. In some cases, employee empowerment practices are specified in regulatory initiatives. For example, the European Union's European Works Councils Directive (1994) stipulates that multinational companies under certain conditions should establish transnational employee consultation structure covering their European operations. Research evidence suggests that compliance with this policy varies, ranging from non-compliance to minimal compliance, and to a proactive approach if the management can see the benefit of it (Marginson *et al*., 2013).

Thus, even though employee empowerment brings about mutual benefits and may even be emphasised in regulatory initiatives, its implementation in organisations is far from problem free. Jones *et al.*'s (2013) review of research in the automobile industry pointed out the tension between employee empowerment practices and production enhancement. It reflected the issue of managerial control, which has been regarded as an inherent imperative in capitalist production (Thompson and Vincent, 2010). The control thesis indicates that for the purpose of cost reduction, production enhancement and thus profit maximisation, management would employ various strategies, such as early forms of direct, technical and bureaucratic control, and more recent normative control, customer control, and neo-normative control (Edwards, 1979; Fuller and Smith, 1991; Frenkel *et al.*, 1995; Callaghan and Thompson, 2001; Gamble, 2007; Sturdy *et al.*, 2010), to manipulate the labour process.

Employee participation in OHS management can be seen as a form of employee empowerment, which refers to managerial practices aimed to share information, rewards, work related knowledge, and decision-making authority with employees

(Bowen and Lawler, 1995). It is considered to be beneficial to both employees and organisations. In terms of OHS management, the tension between employee participation and short term production targets may also arise from time to time. As such, it is perhaps not surprising that senior management commitment is seen as the other key factor for effective OHS management (Frick *et al.*, 2000). Such commitment is fundamentally reflected by the resources employers put in place for the purpose of detecting, abating and preventing workplace hazards (Nytro *et al.*, 1998; LaMontagne *et al.*, 2004). Apart from allocation of OHS resources or funds, it also involves systematic management of workplace risk by using techniques such as effective workplace health and safety committee and risk communication procedures (Bohle and Quinlan, 2000). In fact one of the key indicators of genuine senior management commitment is their ability to elicit and encourage effective participation from the employees in the management of workplace health and safety. In shipping, the ISM Code makes it clear that 'the cornerstone of good safety management is the commitment from the top' (IMO, 2005). In practice, however, very little is known about how the tension between management focus on production enhancement and the commitment to active employee participation is played out and managed in the shipping industry.

ISM Implementation

The implementation of the ISM Code has triggered a few pieces of research using different methods and drawing some discrepant conclusions. Tzannatos and Kokotos (2009) examined all the 268 accidents involving Greek-flagged ships between 1993 and 2006, a period spanning before and after the implementation of the Code. They found that the rate of incidents induced by human errors dropped from around 64 to 52 per cent. More recently, Kokotos (2013) extended the examination to include the accidents involving Greek-flagged ships in a period of 17 years from 1995 and 2011. The examination found a continuous and statistically significant decrease in the rates

of accidents induced by human error. As such, both pieces of research confirmed a certain level of positive effectiveness of ISM implementation. The use of 'hard data', such as accidents records, to assess the effect of the Code, however, has its problems. As pointed by the IMO (2005), it is impossible to tell whether the observed effect is caused by ISM implementation or by other contemporary legislative and administrative requirements. Moreover, one of the major research findings shows that underreporting of safety-related occurrences is noticeable and a culture of underreporting is prevalent in this industry (Ellis, Bloor, and Sampson, 2010; Nielsen and Roberts, 1999; Oltedal and McArthur, 2011). As a consequence, the reported data could not reflect the actual mortality and injury rates which remain unknown due to the industry structure.

To overcome the limitations of pure statistical evidence, an IMO (2005) initiated study employed a different methodology. It utilised questionnaires to elicit opinions of various stakeholders, including maritime administrators, shipping operators, ship managers, and seafarers, on the effectiveness of ISM implementation globally. The results of the study suggested that the overwhelming majority of respondents perceived the ISM Code useful and beneficial. However, the group of experts who carried out this study had doubts about the positive results and held the view that the respondents who completed and returned the questionnaires were mostly from those who had positive opinions on the Code in the first place and the percentage of seafarers involved was very limited.

Thus, both the results of hard data and opinions of industrial stakeholders are not firmly convincing, since they fail to reflect how the Code has been implemented in shipboard daily practice. In this context, Bhattacharya (2011 and 2012) examined seafarers' participation in the ISM implementation on four oil tankers from two shipping companies. He found that in both companies seafarers were unwilling and unable to participate in ISM implementation and merely pretended to comply with the

requirements of the OHS management by falsifying logbooks and checklists. Bhattacharya further argued that the failure in eliciting seafarers' participation was caused mainly by their fear of being blamed and losing job. Such failure means that OHS management in shipping is still a major concern as various relevant studies have suggested (Psarros *et al*., 2010; Lappalainen *et al*., 2011; Oltedal and McArthur, 2011; Batalden and Sydnes, 2013).

The limited research evidence on ISM implementation so far suggests that while it may have produced some positive effects, the implementation in practice has painted a rather different image of workplace OHS management. Bhattacharya (2012) has explored issues related to seafarers' participation in workplace safety management, one of the key factors of successful implementation of OHS management systems. In this paper, we examine interactions between shore-based management and shipboard seafarers which reflect the tension between production enhancement and seafarers' participation and how it is managed.

Shipping is unique since there is a physical separation between the shipboard workplace and shore-based management and also because the management structure of ship operations is typically hierarchical (Bhattacharya and Tang, 2013; Sampson, 2013). On ships, seafarers are positioned into hierarchical ranks according to their roles and responsibilities, ranging from senior officer, junior officers and ratings, with shipmasters being on the top. A shipmaster has dominant power on the ship and is often regarded as 'king' (Sampson, 2013). On top of the shipboard structure, there is also a hierarchical division between shore based managers and seafarers as employees. In this context, shipmasters can be regarded as supervisors of ship operation, but their supervision is subject to shore-based management (Bhattacharya and Tang, 2013). This hierarchy arguably would not be conducive to employee participation. However, safe operation and navigation have always been of paramount importance in this industry. In this context, seafarers' participation in managing OHS is crucial, and the

ISM Code clearly states that the SMS of a Company should contain an explicit statement emphasising the ship master's authority and the Company should ensure that 'the master has the overriding authority and the responsibility to make decisions with respect to safety and pollution prevention and to request the Company's assistance as may be necessary' in *Section 5 Master's Responsibility and Authority*.

The study was conducted in a Chinese context. Within organisations in China, a high power distance between superiors and inferiors has been noted (Hofstede, 1991). The literature shows that Chinese cultural traditions tend to lead managers of organisations to adopt centralised organisational structures and decision-making processes (Lu, 1991; Lan, 1999; Schlevogt, 2002). Such a culture serves to promote compliance with higher authority and discourage any challenge to the authority of the superior. Arguably, employee participation or empowerment is likely to be inhibited by the high power distance in China, and in this context management commitment is more important if effective employee participation is to be solicited.

In view of the hierarchical structure and high power distance in Chinese shipping companies on the one hand, and the overriding authority given to a shipmaster by the ISM Code on the other, it is interesting to investigate situations where a shipmaster's decision-making power is likely to jeopardise short-term production schedules and to examine how this conflict is negotiated and solved between ship and shore. As shipboard workplace is hierarchical, if the shipmaster's decision is not respected, the participation of seafarers in the lower hierarchy is bound to be ignored and senior management commitment can only be lip service. This paper aims to examine how the tension between employee participation and production enhancement is played out and managed in the shipping industry, the study of which will shed some light on the effectiveness of ISM implementation in the Chinese chemical shipping industry.

Research in Chinese Chemical Shipping

The significance of making a study in the chemical shipping industry is acknowledged, since ‘a substantial proportion of global chemical products’ and ‘many substances that are known to be hazardous to health’ are transported by ship (Walters, 2007, p.62). This research took a qualitative approach, focusing on shore management in two Chinese chemical shipping companies and four chemical tankers operated by them. Both companies are located in the Yangtze delta area in China. Company 1 (C1) is affiliated to its Group Company which is a listed company dedicated to oil and chemical transportation. By the end of 2014, the company owned 21 special cargo carriers, half of which were chemical tankers. The majority of its fleet is IMO type II tankers with cargo tank coating materials of epoxy resin, phenolic resin, or polyurethane. The cargoes carried cover a wide range of categories, for example, those derived from aromatics, esters, acids and aldehydes. The fleet was mainly registered with Chinese nationality. The major trading areas were in the western Asia Pacific region although several large ships were operated globally. Company 2 (C2) was co-founded by a few strategic investors. By the end of 2014, there were 15 chemical tankers. To a large extent, the scale of its fleet and trading routes were similar to C1. Both companies have stable cooperation with some of the major international well-known petrochemical companies. A majority of its ships passed external inspections from oil majors and chemical producers such as BASF (A German Holding Company), Shell, BP (British Petroleum), Exxon-Mobil, Lucite and Dow Chemical. Both companies have been fairly profitable during the period of study under the context of the slow development of chemical tanker fleet and growing demand for chemical shipping in China over the past decade.

Both companies are managed by Chinese managers and their ships are crewed by Chinese workers. There are several hundred crew members working for both companies. A majority of crew members in C1 had a long-term contract with their company. In C1, the crew team was comparatively stable. The company tries to fix

individual crew members on a particular ship if his work performance was positively appraised by the company. In C2, about 15 percent of crew have longer contract terms (usually 3 or 5 years) with the company. The company also recruits individual free lance seafarers from the labour market, most of whom work on a one-off contract.

As their ships trade internationally, they are subject to international regulations as well as regulatory inspections conducted by various enforcement bodies, such as Flag State Control (FSC), Port State Control (PSC), Oil Company International Marine Forum (OCIMF), and classification Society. In this sense, Chinese tanker companies are no difference from their foreign competitors, subject to the same regulations and enforcement mechanisms. It is also worth mentioning here that because they carry dangerous cargo, oil and chemical tankers are subject to more stringent regulation and inspection. As such, they have a better safety record than that of other types of ships (Oldham, 1998), and they are among the first group of ships on which ISM implementation was made mandatory.

Prior to the field work, two sets of open-ended and flexible interview schedules were designed and tested in both English and Chinese languages, one for ship managers ashore and the other for seafarers. The fieldwork took place mainly between 2011 and 2012, and was refreshed in 2014, and the field researcher visited the two companies' headquarters and also sailed with the four chemical tankers for four research voyages, one voyage with each vessel. The field researcher interviewed 15 shore-based managers and 50 working seafarers. In addition, on-board observation was conducted and field notes were written on a daily basis. All the interviews were conducted in Chinese. They were transcribed and translated into English, and then all the interview data and field notes were coded with the aid of Nvivo software.

Management Rhetoric and Assurance

In compliance with the Code, the SMSs of both Chinese shipping companies contained

a dedicated section called *Shipmaster's Power Statement*. In the SMS of C1, it stated:

> For the protection of human life…, a shipmaster can take any measures or issue any orders whenever necessary. No matter whether those measures or orders are consistent with company's requirements, this decision-making power should not be constrained by the ship owner, charterer, or any other persons. The company promises to guarantee the shipmaster's right and welfare, and should not treat him differently whenever he exerts his absolute power.

The SMS C2 similarly stated:

> A shipmaster can take all necessary measures… He has the absolute power to take determined actions in order to prevent the crew from being hurt, the ship or cargo being damaged, and ocean environment being polluted. A shipmaster may use his professional judgement and should not be constrained by the ship owner, charterer and any other person.

The interviews with the management in both companies indicated that the above statements were adhered to. Most major decisions were taken in consultation with ship's crew, and the crew's decision-making power was well respected by the management in both companies. Two common reasons were given. First, when a ship was at sea, the crew, as front-line workers, would have the best knowledge of the shipboard work environment. Second, a shipmaster-responsibility scheme was implemented as a result of SMS adoption required by the ISM Code. Although a company's management remained responsible for the safety supervision of ships, a shipmaster was still the key person for ensuring the ship's safety. With his professional knowledge and on-the-spot observation, a shipmaster could make better and more reasonable decisions than could others, as a marine engineering superintendent explained:

> In general, if the company's order is different from a captain's decision, the captain's decision is dominant. After all, the captain is on the spot. He knows the real situation much better than us. His decision tends to be more reasonable.

In a few cases, some management interviewees, such as a marine engineering manager, commented that senior crew members could make immediate decisions and 'report to the company at a later stage'. In general, the management would not interfere in

masters' decisions except when there was a 'significant deviation'. The emerging data suggested that the management in both companies agreed that a shipmaster's independent decision-making power should be guaranteed, and not be restrained by any additional terms. One marine engineering superintendent stated that a master's independent decision-making was even encouraged by the shore management:

> When I was on board, I often encouraged the captain: whatever happens, you should have your own judgement and should not be affected by other external factors.

The shore interview data thus seemed to suggest that a shipmaster's decision-making power was well respected and that crew's participation in the major decision-making process was considered important by the management. To ensure safety, the management appeared willing to delegate the authority to shipmasters.

However, upon further examination, it became clear that in practice, shipmasters' overriding authority was not respected unconditionally. Managers stated that shipmasters' decision-making power or absolute power should depend on the actual context in which an issue arose. In other words, this power was respected if it was not in conflict with the company's 'core interest'. For example, one marine affairs manager said:

> We work in the shore office. From our perspective, we cannot say, 'Captain, you just do it as you wish'. We would also consider whether the action is line with the company...the boss's intent (interest). If a captain insists on his own decision, we would support him. But we could not support him to act against the company.

Thus, 'the boss's intent' was one crucial factor in shipmaster's authority. But what was 'the boss's intent'? Another manager made it rather clear:

> Although the ISM Code specified this absolute power, understanding this statement would vary when there was conflict between safety, production and profit. The communication technology has improved, and crew's decisions should be approved by the company. There were some conditional terms imposed on the use of a captain's decision-making power.

The shipmasters' authority then was far from absolute, and it was respected and supported only if it was not in conflict with the company's commercial interest and profit. But, it could also mean that if there were a conflict, however, the company could prioritise profit over safety. In this sense, the so-called 'genuine' senior management commitment to OHS was blurred.

The above quotation also suggests that the development of modern communication technology, such as satellite communication, has significantly reduced the 'distance' between shore and ships. As a consequence, a shipmaster's decision-making was more likely to be influenced by the shore management to prioritise the company's profit earning. In fact, it frequently happened that a shipmaster's decision had to be approved by their company before further action could be taken. In order to satisfy the boss's 'core interest', the high level of consistency between what was required by the management and what was actually done on board ships was emphasised. For example, a manager stated:

> The company's order should be implemented on board ships without any compromise.

These words made it clear that in fact it was still the shore management that dominated the ship's routine operation.

From the management's perspective, full compliance with their orders implied good OHS management at sea. Some managers clearly expressed the view that if a crew acted according to their instructions, they would not be held responsible for any negative OHS consequences. In practice, the interview with two marine engineering superintendents also suggested that the real situation in both companies demonstrated a certain level of satisfaction to the management in terms of a crew's response to their orders:

> According to my experience, disagreement between shore management and crew was rare.

> There has been no case where a ship has failed to follow the company's orders.

These two quotations draw a rather harmonious picture. What was the experience of shipmasters regarding their decision-making power? Is it the case that they were normally happy to follow, and rarely disagree with, company instructions? Further examination of shipboard practice will shed some light on these questions.

Shipmaster's Authority in Practice

On board a ship, a shipmaster was responsible for overall shipboard OHS and officially given the overriding authority. When asked about this authority, however, shipmasters were not impressed, especially if it was related to sailing schedules. One shipmaster gave a recent example. His ship was going to call in at a domestic port in China, which was his first voyage there. By that time, it was night and already dark:

> ...There was only one tug available and it was at night. I replied to them [the management] I could not call at the berth. Not long after, the company called me again…They ordered me to call at the port…From my perspective, they were my immediate superiors. They asked me to call at the port. Even though I followed the order, I felt very reluctant.

Notwithstanding his reluctance, the shipmaster did follow the company's order and took a risk to do so. This led him to re-think his decision regarding his decision-making power as a shipmaster:

> Regarding this issue, I had contradictory feelings. When the safety aspect conflicts with the business aspect, the safety should be prioritised. When the company's leaders visited us, they also said so. The same was stated in the management system. They repeatedly emphasised this principle. The management's statement about a captain's overwhelming power was stated and signed. But, in practice, it is different!

This shipmaster was upset by management's response, and he felt unaided in the critical situation where the ship's safety and the company's interest were in conflict, as a result of which there was little room to accommodate his independent decisions.

This concern was also shared by other crew members, including junior officers and ratings. A bosun recounted an event, in which the ship confronted heavy weather after the ship set sail outward bound. The shipmaster thought the situation dangerous and reversed the ship's course back to shelter. Then, the company started urging him: 'Other ships are sailing as usual, so why don't you dare to sail?' Eventually, the ship was forced to resume sailing again. Even though no serious OHS issues occurred, sailing in such conditions could be fraught with problems. One third officer explained the sufferings they had to bear:

> The ship encountered a low pressure storm. Affected by beam seas, the ship rolled heavily. Most things on desks were gone. Several cadets were seasick and vomited the whole day.

In such situations, the crew often felt unhappy with not only the shore management, but also the shipmaster. In their opinion, the shipmaster was not strong enough to withstand the pressure from management. Furthermore, they felt that the shipmaster sacrificed crew's safety for a good impression that he gave to the shore management. Fundamentally, these mixed feelings originated from management dominance in ship operations – shipmasters choices were dominated by shore management and crew OHS was largely neglected.

Nevertheless it is a regulatory requirement and a written policy that a shipmaster has the overriding authority when safety and environment are threatened. For this reason, any explicit order from the management asking shipmasters to follow company instructions carries a risk. If an incident occurs, such an order could evidently make the management directly responsible. To avoid causing this consequence, the management often resorted to giving orders in a more flexible and more implicit way. The abundance of word (multi-) meanings in the Chinese language certainly helps and is used for a certain effect – certain words in a specific context should be understood in the opposite way. For example, a chief engineer illustrated the multiplicity of words' meanings as follows:

> 'Captain…the ship was *still* anchored, but you must ensure safety'...this is a

> reverse of the words' meaning. In Chinese, the meaning of words in this context should be understood in reverse.

In the Chinese culture, the communication style is more 'implicit, subtle and indirect' than in western counterparts (Shi and Westwood, 2000, p.212). The intention is mainly to avoid direct confrontation and to preserve harmony and face. Usually, the real meaning (intention) of communication is embedded in its context, such as tacit understandings and mutual relationships, rather than in the words themselves (Hall and Hall, 1987; Shi and Westwood, 2002). In this quotation, literally, the management seemed to offer a kind of safety reminder by emphasising the word *'still'*, but the hidden meaning was that the ship should not remain at anchor, and should start off on the next leg of the voyage.

A chief officer gave another example:

> The company wanted you to sail, so the company would not give you direct order 'not to proceed'. 'Captain, you see, you keep sailing if conditions allow…You decide'. How does a captain make a decision? Many similar issues ... putting the ball in his court…, they are not willing to take direct responsibility.

Both examples indicate that seafarers read between the lines. The data show that this was rather a common practice. Such a practice reflects a tacit and mutual understanding between the management and the crew. It might be interpreted as complicity between the two. However, the crew was rather reluctant about this practice, since it benefited the management at the cost of their safety. Despite the reluctance from the crews, shipmasters had to participate in scheduling matters in order not to offend the managers.

Bhattacharya (2011 and 2012) found in his research that the short-term contractual employment practice which had become a norm in the shipping industry internationally made seafarers fear of job security and dared not to displease managers. In this research, as mentioned earlier, C1 employed most of its crew in long-term

contracts, while C2 offered most of its crew short-term contracts. Despite this difference, however, the data suggests that crew in both companies tried to avoid offending managers, since the managers played a decisive role in their performance appraisal which was closely related to their interests. In C1, crew informants revealed that they were afraid of displeasing managers since a bad appraisal would lead to a deduction of income and slow promotion. Additionally, in C2, unsatisfactory performance may also mean no future employment. In general, crew informants unanimously pointed out that financial income and promotion were two issues they were concerned most, as one chief officer stated:

> What might work for the crew are: first, income; second, promotion; and then family concern since there is a family behind each of the crew. Crew's income is the core supporting their family.

For ensuring that their salary was not deducted, many crew would rather remain some safety related problems unreported, particularly those likely to be deemed by shore management as human errors (crew's mistakes or faults).

Thus it is understandable that why 'disagreement between shore management and crew was rare'. It reveals that despite the distance between shore and ships, the management was still in control of shipboard workplaces and granted shipmasters no real authority. As management was committed to profit, shipboard OHS practice was by and large compromised, particularly in situations where a decision whether to 'stay or go' had to be made in an adverse natural environment.

The Impact on Crew's Shipboard Work Practice

It was not only in adverse weather conditions that shipboard OHS practice could suffer. The evidence emerged from this study showed that the management tended to be committed to profit rather than safety, and since the shipmasters felt obliged to follow the company's orders, it was common that ships were operated on tight and hectic sailing schedules, and as a consequence, the crew suffered from prolonged working

hours. For example, a senior engineer described an occasion when the ship's normal schedule was turned into a rush by a sudden order received from the company:

> Last time, we were going to carry cargoes in a port. The chief officer on this ship is good at work arrangements and would not cause overtime. Suddenly, the company ordered the ship to call at the berth that night. Then tank washing, ventilating, mopping the tank floor…all had to be done. Usually, it took two days, but we were forced to complete the tasks in one day.

Similarly, a junior officer described the adverse effects of tight sailing schedules on them:

> The company's order was issued on board, and we had to act accordingly. In our minds, we felt that the schedule was too tight and we were too tired. You (the field researcher) were seasick yesterday. They [deck crews] were on deck to wash the cargo tanks even though the ship pitched and rolled heavily. There was no other way around it.

Both quotations raised the issues of work intensity and fatigue. In fact, fatigue has been a widespread OHS concern in the shipping industry globally for many years and it is a common factor behind a large number of maritime accidents (Smith, 2007; Wadsworth *et al*., 2008). There are also international conventions addressing seafarers' hours of work and hours of rest aiming to prevent fatigue. In order to comply with the conventions, both companies set limits to working hours in their SMSs. However, crew members expressed the view that the real working hours were much longer than the stipulated limit. The field notes recorded a number of observed events. For example, on board a ship, a busy period of time for tank washing was described by the field researcher as follows:

> Over the last two days, I could see that everybody on board was very busy...I went to the bridge again after dinner. I saw the second officer was still on the bridge. I asked why since it was not his duty time. He answered that the chief officer was sleeping and he slept only several hours yesterday.

It might be expected that when the market condition is favourable, the companies could be able to make more profits and thus have more resources to improve their overall OHS performance. However, at the time of this study the data suggests that a booming

market was likely to make the crew more fatigued, since the management tended to tighten up sailing schedules. This could make for more voyages and generate more revenue over a given period of time. Nevertheless, it also means that crew's rest time would be squeezed and shipboard OHS worsened. For example, one junior officer explained:

> The ship would discharge cargo without any delay. Like this ship, the berthing time would not exceed 16 hours. There was no time to rest and no time to go ashore. It was normal to call at berth at 1 or 2 am in the early morning.

Furthermore, tight schedules also squeezed time for ships' normal maintenance work, particularly regarding the work in the engine department. In a sense, it can be said that tight schedules caused fatigue not only for the crew, but also to the machinery. One chief engineer complained:

> All our work was prioritised by the ship's sailing schedules. The company wanted us to keep the schedules, but there was a conflict with the equipment maintenance plan. The engine had to run, and we didn't even have time to do the work. The company asked us to ensure safe production, but what happened if a machine was over fatigued? The ship would not stop sailing until its condition did not allow it to continue.

In general, an overall impression on the four ships on which the field researcher sailed was that, more or less, crew members experienced the problems of tight and hectic sailing schedules and prolonged working hours. They nevertheless reckoned that the 'wise and safe way' was to do as requested by their company even though a decision might be 'unreasonable'.

Concluding Discussion

Employee empowerment practice is widely seen as beneficial to both employees and organisations (Fernandez and Moldogaziev, 2013; Kim and Fernandez, 2015; Ogbonnaya and Valizade, 2015). It is also the case in relation to OHS, as the literature suggests that active employee participation is essential for effective OHS management (Frick *et al.*, 2000; Quinlan and Mayhew, 2000; Walters, 2004; Gunningham, 2008).

Nevertheless, the literature also points out a tension between production enhancement and employee empowerment. If production enhancement is at stake, employee empowerment is likely to be ignored (Jones *et al*., 2013). In this context, ISM requires commitment from senior management to safety. Such commitment arguably would serve to prioritise safety over short-term production enhancement when there is a conflict between the two. Against this background, this paper looks into how the tension between employee empowerment and short-term production targets is managed in relation to OHS in Chinese chemical shipping.

It reveals that the shore management tends to prioritise efficient production (in the shipping context this means fast sailing) rather than safety. It is suggested that more profit comes from the 'speed and efficiency' of work and 'the money is to be made by keeping it working' in the industry (Perrow, 1999, p.181). Even though ships are mobile and usually far away from shore management, modern communication technologies enable management to track real-time information of their ships, such as position and speed. Shore management is able to monitor ship's schedules, and shipmasters have to stick to schedules required by the management. The rationale behind this is that ships with faster turn-around times can carry more cargoes in a year and thus their company may earn more revenue. However, when OHS and sailing schedules are in conflict, managers are likely to request shipmasters to prioritise the 'core interest' of their company. Rather than challenging such requests from management, shipmasters tend to read between the lines and tacitly cooperate with them. Arguably the strict hierarchy involved in ship management and high power distance in Chinese cultural context facilitates such cooperation.

Although both companies examined here have policies entrusting overriding authority to shipmasters in compliance with the ISM Code, such policies merely remain on paper and do not help break through the hierarchy to empower crews and encourage their participation. When it does make a difference, it is the practice that managers

have become more subtle in giving orders to exert dominance. Nevertheless, the tacit cooperation of shipmasters only serves to illustrate the dominant position of shore management and the priority of efficient production over safety. When the management prioritises profit at the cost of OHS, one of the key factors of successful OHS management – employee participation – is simply side-lined and even ignored by the management. Without management commitment, employee participation is vulnerable and unlikely to function properly. As a consequence of tightening up schedules in pursuit of profit, seafarers' health, safety and well-being are neglected, which contributes little to the improvement of OHS management on ships.

As such, this paper concurs with Bhattacharya's (2011 and 2012) conclusion that the ISM implementation is far from successful, but from a different perspective. While Bhattacharya focused on the predicament of seafarer's participation, this paper shifts the focus onto the interaction between shore-based management and seafarers as well as the tension involved in such interaction between production enhancement and seafarers' participation. It shows that even though management commitment to safety is written in company policies and managers claim to encourage seafarers to participate in decision-making processes, it is not genuinely practised in reality. When there is conflict between speedy production and crew's safety concerns, managers tend to cope with the tension by silencing the latter and tactically delivering their orders in pursuit of speedy production and profits. In this sense, managers' priority and commitments are unhelpful in terms of OHS management and the negative impact on shipboard OHS is apparently unavoidable.

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