The Effectiveness of Health and Safety Management in Chinese Shipping: From the Perspective of a Shipmaster's Decision-making Power

Conghua Xue, David Walters and Lijun Tang

***Abstract*—Systematic OHSM has been a leitmotif of current regulation and practice in the world. It has led both positive and negative OHS consequences. The studies in relation to OHS in the international shipping industry are comparatively rare following the implementation of the ISM Code. Thus there is an urgent need for the examination of the case in this industry. This study is conducted in the Chinese shipping industry with special focus on a shipmaster's decision-making power in relation to OHSM and its impact on shipboard OHSM practice. The study reveals a significant imbalance of power relation between the management and crew. As a consequence of such imbalance, the limited crew participation was explored, and the dominant management concerns of efficiency over safety bring about potential indirect effects on crew's health, safety and well-being. They all suggest that the OHSM systems were of limited help in safeguarding crew's OHS and shipboard OHSM practice.**

***Index Terms*—Occupational Health and Safety Management, ISM Code, Chinese Shipping, Shipmaster's Power**

I. Introduction

It has been a fact that there is an increasing adoption of OHSM Systems across organisations, industries and countries since the 1980s. Even in countries where formal OHSM Systems are not mandated by their OHS legislation, it is common that establishing and maintaining such a system is required by most jurisdictions [1][2].

The case in the international shipping industry is not an exception. The shipping industry generally is described as 'high-risk' by some authors [3][4][5]. Past research showed a higher reported frequency of incidences in high-risk industries than others [6][7]. Research findings by Lindoe [8] also showed that seafarers' fatality and injury rates are much higher than the average in land based industries in many seafaring countries. Therefore, it is important to conduct research in relation to shipboard OHSM in this industry.

Manuscript received February 18, 2015.

Dr Conghua Xue is an associate professor at Nantong Shipping College, 226010, China (Mobile: +86 13773678135; e-mail: Conghua_xue@hotmail.com).

Dr David Walters is a professor at Cardiff University, United Kingdom (e-mail: WaltersD@cardiff.ac.uk).

Dr Lijun Tang is a research associate at Cardiff University, United Kingdom (e-mail: TangL1@cardiff.ac.uk).

II. Literature Review

A. OHSM in Shipping and Previous Studies

The shipping industry had been self-regulating for a long time. By tradition, ships were subject to the laws, rules and regulations of their own flag states and in the countries where they sailed in the past. Although the International Maritime Organisation (IMO) adopted a considerable number of legal instruments intended to improve maritime safety, the major focus lay on the technical issues rather than management factors. It was widely acknowledged that the Herald of Free Enterprise accident in 1987 catalysed the move towards a systematic OHSM strategy in the international shipping industry. It directly led to the introduction of the International Safety Management (ISM) Code in 1998 and marked a 'turning point' for the industry. All shipping companies around the world subject to the Code were required to establish mandated forms of safety management systems.

In essence the introduction of the ISM Code is nothing particularly unique. It shares the features of many of the regulatory standards for OHSM, particularly of those in western world countries. The development of the ISM Code incorporated major elements originating from the International Chamber of Shipping/International Shipping Federation (ICS/ISF) voluntary guidelines on ship safety management, the UK Merchant Shipping Guidance Notes M.1188, and ISO standards for quality management.

A number of previous studies suggest that the increased adoption of OHSM Systems by organisations in a range of different industries has led to both 'positive and negative' OHS consequences [1][6][9][10][11]. Given the very limited sources available in the maritime literature previous studies on the safety management in the maritime industry were mainly conducted in questionnaire-based surveys [3][12]. They failed to expose the underlying concerns and reach any firm conclusion, and further in-depth qualitative research was recommended [13]. The dearth of systematic research evaluating the impact of the Code and a growing concern from the industry as well as the maritime express also suggest the value of ongoing research in this area [7].

As a contracting member, China was obliged to implement the ISM Code enacted by the International Maritime Organisation (IMO). Since then, fundamental changes have also been made in the Chinese shipping industry. As stated,

ISBN: 978-988-14047-0-1
ISSN: 2078-0958 (Print); ISSN: 2078-0966 (Online)

one of the most significant impacts on a shipping company is the establishment of a safety management system. The search of the major Chinese academic databases showed that the articles available about the implementation of the ISM Code in China mainly addressed theoretical or technical issues integrated with personal views and suggestions. The lack of empirical studies is evident in terms of operationalisation of OHSM Systems in the Chinese context. Thus, the need for ongoing studies in this industry is evident.

B. Shipmaster's Power in the Context of OHSM in Shipping

Before the introduction of the Code, a shipmaster's power was subject to different interpretations. With the adoption of a mandated safety management system, it was required that the levels of authority and lines of communication between shore and shipboard personnel be defined. In Section 5 Master's Responsibility and Authority, the Code clearly stated that the Safety Management System of a Company should contains a clear statement emphasising the 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' [14].

In compliance with such a requirement of the Code, there was a dedicated section called Shipmaster's Power Statement in the management systems of the two Chinese shipping companies, which similarly address that 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.

Thus, it becomes clear that a shipmaster's independent decision-making power in relation to the health and safety management of his ship is assured both in the ISM Code and SMS of his company.

C. The Power Relation in Organisational Context

Within an organisational structure, different levels of formal authority are distributed to various positions in the hierarchy. In practice, the influence of hierarchy is externalised by the organisational power attached to each of the positions within it [15]. Magee and Galinsky [16] and Antonsen [17] interpreted power as control of activities, resources and employee performance. Basically management-employee work interaction is about the execution of management power, which is one of the substantial aspects of OHSM. In essence, the execution of such power involves formal and information-based routines and procedures managers use to maintain or alter patterns in organisational activities [18].

The control of management power is organised into a hierarchy of dedicated roles underpinned by allocating authority to positions in the hierarchy [19]. In general, the management's power control over OHS is characterised by the control over the process of work across a hierarchy in an organisation. In some industries and work organisations this was rooted in Taylorist approaches to 'scientific management' and has long influenced both management practice and the reactive strategies of the labour movement [19]. The role of management's power control was highlighted by Zwetsloot [20], since control of work process is usually achieved by communication across the hierarchy and it generates results. It directly affects workplace health and safety.

The role of power in the context of OHSM has been critically discussed in the wide literature. Dorman [21] conducted research on the question 'if safety pays, why do employers not invest in it,' and the result shows that health and safety debates are about power and control. Giddens [22] pointed out that in a broad sense, power can be related to the ability to get things done, i.e. create activity. In a narrow sense, power is simply domination through an organisational hierarchy. The division of labour in an organisation leads to power differences between management and employees [23]. Bellaby [24] found that asymmetrical power relations arise when workers work in an unsafe condition which is created by their employer. Due to this power asymmetry, workers become powerless bodies. As a result, they tend to be vulnerable to work related health and safety problems.

In the context of shipping shore-ship interaction in a company plays a leading role in the operation of a management system and the underlying functional factor is apparently organisational power that mediates the working process. The shore management, situated at a higher hierarchical level, was therefore entitled to exert controlling power over shipboard OHSM practice. Thus it is essential to have a clear understanding of the power relation between the management ashore and crew, particularly shipmaster on board in the process of OHSM in organisational context. Previous studies showed that factors affecting the implementation and outcome of OHSM were complex [25][26][27][13], the power issue that is in play in organisational context has not been sufficiently concerned and particularly addressed in those studies. Hence, this study will pay special attention to the role of a shipmaster's decision-making power in OHSM in the cases in China.

III. RESEARCH METHODS

The study was conducted in Chinese shipping companies all having Chinese managers and crew. The gaps in knowledge identified in the literature review for this research argued for a qualitative study of the OHSM in the Chinese shipping, which can provide an in-depth understanding of the social implications of the research subject. The study focuses on shore management in two Chinese shipping companies and four chemical tankers operated by them. The field work was mainly conducted in 2011, which included visits to two companies with 13 interviews from management ashore and 45 sailing days on four ships of the companies with 48 interviews from crew. The data was further enriched between 2011 and 2012 during the research process. Prior to the researcher's field work, an open-ended and flexible interview schedule was designed and tested. All the interview data and field notes were coded with the aid of Nvivo software. Based on analysis of qualitative evidence gathered from interviews and some supplementary techniques conducted in company offices and on-board ships during their voyages, the study

ISBN: 978-988-14047-0-1
ISSN: 2078-0958 (Print); ISSN: 2078-0966 (Online)

aims to identify inferences concerning the likely role of a shipmaster in the process of shipboard OHSM, its effectiveness and reorientation of maritime regulatory strategy in the shipping industry more widely.

IV. DIFFERENT PERSPECTIVES

From the management's perspective of the two companies, a shipmaster's decision-making power in relation to shipboard OHSM was fully respected. Meanwhile, the management also expressed their concern about whether the shipmaster's decision-making in relation to OHSM was adequate.

A. The Management: Being Respected and Approved

The study examined the communication process for the purpose of supervising a ship's safe operation, and the interviews with the management in both companies showed they believed that working orders given to crews was conducted in a moderately consultative way. For example, a marine engineering manager explicitly commented that an order was never a 'single-way compulsory one' conducted in 'a top-down approach'. Instead, the management's decisions were taken on the basis of 'understanding the crew's thoughts and their difficulties' (ibid). A senior manager further explained:

> If there was a typhoon, a strong cold front or a rough sea, our analysis and judgment might be different from the crew's observation. This could cause difficulties in implementing (orders). Then we had telephone or email communication to make it feasible.

A similar account was given by a marine engineering superintendent:

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

When a ship was at sea, the crew, as front-line workers, would have the best knowledge of the shipboard work environment. Also, in both companies, a shipmaster's responsibility scheme was implemented as a result of the adoption of a mandated safety management system 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 his ship's safety. With his professional knowledge and on-the-spot observation, a shipmaster could make better and more reasonable decisions than could others.

The shore interviews showed that the practice in both companies was similar to the participative management approach, as widely discussed in the literature [28][29]. This approach aims to balance the involvement of both management and employees in terms of problem solving, decision-making and information processing [30].

Although some data showed that a shipmaster's decision-making was well respected and should not be constrained by other factors, in practice, the understanding of the decision-making power was interpreted conditionally. Some shore interviewees showed rather reserved attitudes in their understanding of this power, particularly a shipmaster's so-called absolute power, in terms in which it was stated in the safety management system. They stated that it was ambiguous, and should depend on the actual context in which an issue arose. A manager interpreted his understanding of a shipmaster's power as follows:

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

Thus, from the management perspective, they showed their respect for crew's decisions regarding the operation and management of the ship. However, it might also be understood that the crew did not question the management decisions and simply followed what they were told by the management. Although the shore interview data showed little tension and discrepancy in the communication between the shore management and a ship's crew, the possible extent of the impact of the shore management on a crew's decisions remained unclear, which will be further discussed next.

B. The Crew: Explicit and Implicit Orders

On board a ship, a shipmaster was certainly the first person responsible for overall shipboard OHSM. Explicit orders are usually given to ships in ship's routine management. It was found that, among all the work supervised by management on shore, a ship's sailing schedules were one of the major concerns. A shipmaster told me a recent event that had happened to him. His ship had been going to call in at a domestic port in QZ in China, which was his first voyage there. By that time, it was night and already dark:

> It was at night. I reply them (the management) I could not call at the berth. Not soon later, the company called me again…They ordered me to call the port)…From my perspective, they asked me to call. Should I call or not call??? Even though I followed the order, I felt very reluctant.

Notwithstanding his reluctance, the shipmaster did follow the management's order and took a risk to call the port.

Coincidentally, a similar example was given by a rating. One evening, the wind was heavy and the sea was also rough. When the ship arrived at the port, the company asked the ship to call at the berth at night. Although the shipmaster felt in a dilemma and thought it was too dangerous, eventually, the ship submitted to the company's order. The company's reply was that the 'company knew the ship had difficulties, but the ship should manage to overcome them' (Rating).

Given that in some cases there might be a foreseeable danger, the management could give their order in a more flexible way. A common practice was that, seemingly, the company was giving orders in such a way that it seemed to be asking for a consultation. In fact, the real situation was described by a chief officer:

> The company wanted you to sail … '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.

In general, many crew clearly expressed that they act according to the company's instructions and it is rare to violate them. It could be understood that it was a kind of forced compliance which tended to become a common practice in the name of the implementation of the management's collective decisions conveyed by a shipmaster. As a consequence, shipboard OHSM 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 or a ship's seaworthiness was not guaranteed.

ISBN: 978-988-14047-0-1
ISSN: 2078-0958 (Print); ISSN: 2078-0966 (Online)

V. THE IMPACT ON CREW SHIPBOARD WORKING PRACTICE

As a 'collective' decision would be agreed between the shore management and a shipmaster, it would be implemented accordingly by the crew. In this section, I will continue to explore the extended impact of such decisions on the OHSM on board ships. The data collected from onboard interviews and observation identified the most direct problems that seriously affected the crews' OHSM practices: one was hectic sailing schedules; another was prolonged working hours.

In order to fully implement the decisions made jointly by the shore management and shipmaster, hectic sailing schedules were observed and identified from the data. On average, the study found that, on board the four ships, the sailing schedules were always hectic. 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. 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.

As seen above, an order given by the shore management had to be implemented by any means. The temporary short notice meant an additional workload for the crew in this case. Although a temporary order was not often seen, the issue of tight schedules was widely addressed by many crew members. One scene was witnessed during the researcher's sailing voyage. Influenced by a strong cold-front winter storm, he was terribly seasick for almost two days lying on my bed, but the tank-washing team continued their work as usual. As a consequence, the hectic schedules intensified the crew's workload and their working environment deteriorated.

During the voyages, many crew felt they were being squeezed by the heavy workload. The shortage of time is contrast to longer working hours, which was also commonly seen in the data. Given the rule in place regarding the limit to working hours, many 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, one of which follows:

> I read the poster on the back door of the bridge and in the dining room, in which it was clearly stated that nobody's work hours should exceed 8 hours a day. But I noticed that, in reality, apart from the cook, everybody on this ship exceeded the stipulated working hours.

Similarly, one rating also described to me a working day during my trip on the ship:

> Last evening, I was on duty from 18.00 to 24.00. When I was ready to hand over my duty, the ship was going to call berth. I was asked to continue till 2.30am. We had work till all the work was done. One cadet continued till 4.00am. Today, I should get up at 5.40am to take over duty. On this ship, if the bosun requests me to continue, I must do so…more time and more work. There is no other way around it.

In general, a general impression on ships the researcher sailed was that, more or less, crew members experienced the problems of hectic sailing schedules and prolonged working hours. However, nobody showed willingness to put forward the questions to the management, since the common word used by them was 'useless'.

VI. DISCUSSIONS AND FINDINGS

A. Revisit of a Shipmaster's Power in Relation to OHSM

The data presented in the previous sections show that although a shipmaster's decision-making power was guaranteed in the written statement in the management systems, his independent decision-making power particularly that relating to ship's sailing, was strongly influenced by the shore management. From a theoretical perspective, although a shipmaster was considered a member of the company's safety management team, the research indicated that his sense of belonging was weak. The written statement of his power did not change the subordinate nature of role in relation to the shore management.

In order to protect the company's 'core interest', any decisions relating to a ship's operation had to be approved by the shore management, which meant that the ultimate decision-making power was in the hands of the shore management of both companies. Although the shore interview data showed the management to believe it exerted a 'moderate and reasonable' controlling power over crew and ship's OHSM activities, the interviews with crew members offered contrasting views on its operationalisation in reality, particularly in the case where a crew's decision was inconsistent with the company's wishes. A general view expressed by many crew was that it didn't work if the decisions were made only based by crew based on the objective conditions without reference to the management's intentions. Similar situation has been addressed in the management process of Chinese companies in the literature, which shows a tendency that the decision-making tended to be centralised. A large power distance was also found to exist between superiors and inferiors within an organisation in China, as a result of which the concentration of authority was high in hierarchy [31]. Lu's study [32] showed that the Chinese cultural traditions tend to lead managers of organisations to adopt a centralised organisational structure and decision-making processes. This was echoed in studies by Lan [33] and Schlevogt [34] emphasising that a strong personal influence from top management was perceived with a propensity for decision-making processes to be centralised.

In brief, this study revealed the high demand from shore management and the low level of autonomy for the crew in two Chinese companies, a similar situation to that existed in the literature. In such circumstances, it was the company's orders or instructions that really mattered; to a large extent, a shipmaster's decision-making power was rather limited.

B. Potential Effects on Crew's Health, Safety and Well-being

On the whole, many crew members had a 'strong sense' of compliance with collective decisions between the shore management and ship's crew. The study showed that, in order to implement company's orders 'without discount', crew at management level, particularly a shipmaster holding senior management positions bore higher psychological pressures than the rest of crew. This was particularly true for a shipmaster when making decisions balancing relationships between safety and efficiency. Perrow [35] observed the great pressure borne by a shipmaster on tight schedules given

ISBN: 978-988-14047-0-1
ISSN: 2078-0958 (Print); ISSN: 2078-0966 (Online)

the fact that shipmasters are usually judged by their ability to stick to sailing schedules. It is widely recognised that psychological pressure can affect anyone's health condition. Under the prolonged influence of psychological pressure, employees can acquire 'lowered immune function, ulcers, cardiovascular problems, anxiety, and depression' [36, p.43].

This study also showed that work intensification and longer working hours were commonly observed on all four ships of both companies. One of the typical 'symptoms' from enduring physical stress was fatigue. Seafarer fatigue has been widely addressed in the literature in the shipping industry. The consequences of fatigue are felt not only in terms of impaired performance and reduced safety, but also by decreased well-being and an increased risk of mental health problems. Both are also known to be risk factors for future chronic disease [37].

In general, crew members bore considerable psychological as well as physical pressures due to centralised decision-making. The hectic schedules and prolonged working hours and subsequent fatigue could pose a severe threat and have potential effects on crew's health, safety and well-being.

C. The Underlying Factors behind the Imbalance of Power

The balance of power between the management and crew clearly plays a role in determining OHSM practice. In this study, it clearly showed that the OHSM in the shipping industry would by no means work properly in the absence of a shipmaster's decision-making power.

The shipmaster's limited power showed the low level of participation in his company's OHSM activities. The limited previous studies show that worker participation in Chinese factories is comparatively lower than those of their western counterparts [38]. However, the role of worker participation in the process of OHSM was considered essential in a participative management approach. The level of worker participation and influence is fundamental to the effects of OHSM [39][40]. Wagner [30] interpreted such participation in decision-making as a process of sharing influence among people in different hierarchical positions. Quinlan and Mayhew [41] argue that most systematic approaches to OHSM require a higher level of employee's involvement and collaboration. Strong worker participation has beneficial consequences for work efficiency and workplace health and safety [42]. The limited decision-making power of a shipmaster in this study suggested that not only the crew at management level, but also the crew at operational and supportive levels all have a low level of crew participation in OHSM. The limited crew's participation emerged from this study suggests that their overall contribution to OHSM was weak.

The limited decision-making power also suggests the strong influence of dominant management power, which was reflected in the management's concern of sailing schedules that were closely related to 'boss's intent', the company's 'core interest' and 'profit earning'. It was resonant with early research findings in this industry that more profit came from the 'speed and efficiency' of work and 'the money is to be made by keeping it working' [35, p.181]. Authors such as Levenstein and Tuminaro [36], Gunningham and Johnstone [43], and Dywer [44] argued that employees' working conditions became worse when an employer bore the pressure of strong market competition and sought for short-term profitability. The findings in my study showed a similar situation in the Chinese shipping industry. As a consequence, workplace OHSM practice was considerably undermined.

It has been commonly recognised that conflicts emerge when safety, efficiency and economic return are conflated by company management [1][45]. Such a problem has also been recognised previously, for example in Perrow's work [35]. The priority of efficiency and profit over safety is basically embedded in the fundamental conflicting interests between the shore management and ship's crew. The dominant management power and the limited shipmaster's power deepened such conflict of interests between the two that significantly contributes to worsening the OHSM practice onboard ship.

VII. CONCLUSION

In this study, it is easily seen that there was a significant gap between what the management of the companies studied asserted concerning the power of a shipmaster and how the crew responded and what really happened on board. The hectic sailing schedules, seen on the four tankers on which I sailed, were tightly controlled by the shore management in both companies and the autonomy of a shipmaster in decision-making is obviously limited. In such circumstance, heavy psychological as well as physical burdens on the crew were observed and shipboard OHSM was compromised. Thus it could be concluded that the outcome of OHSM in the Chinese shipping companies in general is by no means successful in the name of full implementation of the ISM Code. The identified existence of the management's concern of profit earning and limited crew participation in the process of OHSM suggest the strong influence of conflicts of interests between the management and crew that underlay the imbalance of power of the two.

Although this study was conducted in Chinese companies, this situation is not in my view determined by the particular conditions of Chinese shipping industry. My findings resonate well with the wide literature on merchant shipping generally and globally, which emphasises this a similar observation [25][26][27]. A typical example is that the low level of crew participation was also found in European Shipping [46][47]. Thus it can be seen that imbalance of power between the management and crew results from the imbalance between profit and safety, which is not a particular feature of the Chinese shipping industry but symptomatic of such imbalance found in other employment situations globally. My study of the Chinese shipping industry reaches a similar conclusion and such conflict remains unchanged in modern organisations. The findings of this study, together with previous studies, suggest that there is an urgent need for maritime policy makers both at international and national levels and for industrial practitioners to re-think the role of the ISM Code in promoting OHSM in the international shipping industry to re-consider maritime regulatory strategies.

ISBN: 978-988-14047-0-1
ISSN: 2078-0958 (Print); ISSN: 2078-0966 (Online)

REFERENCES

[1] T. Nichols and E. Tucker, "OHS management systems in the United Kingdom and Ontario, Canada: a political economy perspective," In *Systematic Occupational Health and Safety Management*. K. Frick, P. L. Jensen, M. Quinlan and T. Wilthagen, Eds. Amsterdam & New York: Pergamon, 2000, pp. 285-309.

[2] D. Walters, R. Johnstone, K. Frick, M. Quinlan, G. Baril-Gingras and A. Thebaud-Mony, *Regulating Workplace Risks: A Comparative Study of Inspection Regimes in Times of Change*. Northampton: Edward Elgar Publishing Limited, 2011.

[3] P. Anderson, *Cracking the Code: the Relevance of the ISM Code and Its Impact on Shipping Practices*. London: Nautical Institute, 2003.

[4] J. I. Havold, "Safety culture in a Norwegian shipping company," *Journal of Safety Research,* vol. 36, no.5, pp.448-458, 2005.

[5] H. Oltedal, and E. Wadsworth, "Risk perception in the Norwegian shipping industry and identification of influencing factors," *Maritime Policy and Management,* vol. 37, no.6, pp.601-623, 2010.

[6] D. Walters, "International developments and their influence on occupational health and safety in advanced market economies," In *Occupational Health and Safety*, C. L. Peterson, and C. Mayhew, Eds. New York: Baywood Publishing Company, 2005, pp.13-30.

[7] D. Walters, and N. Bailey, *Lives in Peril: Profit or Safety in the Global Maritime Industry?* Hampshire: Palgrave Macmillan, 2013.

[8] P. H. Lindoe, "Safe offshore workers and unsafe fishermen – a system failure?" *Policy and Practice in Health and Safety*, vol. 5, no.2, pp.25-39, 2007.

[9] Robson, L.S. *et al.* "The effectiveness of occupational health and safety management system interventions: a systematic review," *Safety Science* 45, pp.329-353, 2007.

[10] Bornstein, S. and Hart, S. "Evaluating occupational safety and health management systems: a collaborative approach," *Policy and Practice in Health and Safety*, vol. 8, no. 1, pp.61-76, 2010.

[11] D. Walters, S. Bhattacharya, and C. H . Xue, "Managing health and safety through the supply chain: a case study of supply chain influence in the shipping industry," In *SIRC Symposium 2011*, Cardiff University, 2011, pp.66-88.

[12] IMO, *The Role of the Human Element: Assessment of the Impact and Effectiveness of Implementation of the ISM Code*. London: IMO, 2005.

[13] S. Bhattacharya, *The Impact of the ISM Code on the Management of Occupational Health and Safety in the Maritime Industry*. PhD Thesis, Cardiff University, 2009.

[14] IMO, *International Safety Management Code(Revised).* London: International Maritime Organisation, 2008.

[15] B. Harley, "The myth of empowerment: work organisation, hierarchy and employee autonomy in contemporary Australian workplaces," *Work, Employment and Society*, vol. 13, no.1, pp.41-66, 1999.

[16] J. C. Magee, and A. D. Galinsky, "Social hierarchy: the self-reinforcing nature of power and status," *The Academy of Management Annals,* vol. 2, pp.351-398, 2008.

[17] S. Antonsen, "Safety culture and the issue of power," *Safety Science*, vol.47, no.2, pp.183-191, 2009.

[18] R. Simons, *Levers of Control: How Managers Use Innovative Control Systems to Drive Strategic Renewal*. Boston: Harvard Business School Press, 1995.

[19] R. E. Walton, "From control to commitment in the workplace," In *The Sociology of Organizations: Classic, Contemporary, and Critical Readings*, M. J. Handel, Ed. California: Sage Publications, 2003, pp.114-122.

[20] G. Zwetsloot, "Developments and debates on OHSM system standardisation and certification," In *Systematic Occupational Health and Safety Management*, K. Frick, P. L. Jensen, M. Quinlan and T. Wilthagen, Eds. Amsterdam & New York: Pergamon, 2000, pp. 391-412.

[21] P. Dorman, "If safety pays, why don't employers invest in it?" In *Systematic Occupational Health and Safety Management*, K. Frick, P. L. Jensen, M. Quinlan and T. Wilthagen, Eds. Amsterdam & New York: Pergamon, 2000, pp. 351-366.

[22] A. Giddens, *The Constitution of Society. Outline of the Theory of Structuration*. Cambridge: Polity, 1984.

[23] J. Pfeffer, *Managing with Power: Politics and Influence in Organisations*. Harvard Business School Press, 1992.

[24] P. Bellaby, *Sick from Work: The Body in Employment*. Aldershot and Brookfield: Ashgate, 1999.

[25] A. W. Parker, *et al*. *A Survey of the Health, Stress and Fatigue of Australian Seafarers*. Canberra: AMSA, 1997.

[26] A. D. Couper, C. J. Walsh, B. A. Sttanbery, G. L. Boerne, *Voyages of Abuse: Seafarers, Human Rights and International Shipping*. London: Pluto Press, 1999.

[27] T. Alderton, *et al*., *The Global Seafarer: Living and Working Conditions in a Globalised Industry*. Geneve: ILO, 2004.

[28] R. C. Kearney, and S. W. Hays, "Labour-management relations and participative decision making: toward a new paradigm," *Public Administration Review,* vol. 54, no.1, pp.44-51, 1994.

[29] S. Kim, "Participative management and job satisfaction: lessons for management leadership," *Public Administration Review,* vol. 62, no.2, pp.231-241, 2002.

[30] J. A. Wagner, "Participation's effect on performance and satisfaction: A reconsideration of research evidence," *Academy of Management Review,* vol.19, no.2, pp.312-330, 1994.

[31] G. Hofstede, *Cultures and Organisations: Software of the Mind*. Berkshire: McGraw-Hill Book Company, 1991.

[32] Y. Lu, *A Longitudinal Study of Chinese Managerial Behaviour: An Inside View of Decision-making under the Economic Reform*. PhD Thesis, University of Aston, Birmingham, 1991.

[33] P. Lan, "Management in the Chinese construction industry," In *China's Managerial Revolution*, M. Warner, Ed. London: Frank Cass, 1999, pp.94-118.

[34] K. Schlevogt, *The Art of Chinese Management: Theory, Evidence, and Applications*. Oxford: Oxford University Press, 2002.

[35] C. Perrow, *Normal Accidents: Living with High-Risk Technologies*, 2nd ed. New Jersey: Princeton University Press, 1999.

[36] C. Levenstein, and D. J. Tuminaro, "The political economy of occupational disease," In *Work, Health, and Environment*, C. Levenstein, and J. Wooding, Eds, New York and London: The Guilford Press, 1997, pp.3-19.

[37] A. Smith, P. Allen, and E. Wadsworth, *Seafarer Fatigue: The Cardiff Research Programme* [Online]. Cardiff University: Centre for Occupational and Health Psychology, 2006, Available http://www.seafarersfatigue.com/

[38] G. D. Brown, "Lean manufacturing comes to China: a case study of its impact on workplace health and safety," *International Journal of Occupation Environmental Health*, vol.13, no.3, pp.249-257.

[39] K. Frick, "Systematic occupational health and safety management – an introduction to a new strategy for occupational safety, health and well-being," In *Systematic Occupational Health and Safety Management*. K. Frick, P. L. Jensen, M. Quinlan and T. Wilthagen, Eds. Amsterdam & New York: Pergamon, 2000, pp. 1-16.

[40] D. Walters, "Workplace arrangements for worker participation in OHS," In *OHS Regulation for a Changing World of Work*. : L. Bluff, M. Gunningham, and R. Johnstone, Eds, Sydney: Federation Press, 2004.

[41] M. Quinlan, and C. Mayhew, "Precarious employment, work re-organisation and the fracturing of OHS management," In *Systematic Occupational Health and Safety Management*. K. Frick, P. L. Jensen, M. Quinlan and T. Wilthagen, Eds. Amsterdam & New York: Pergamon, 2000, pp. 175-198..

[42] I. Akerlind, S. Schunder, and K. Frick, "Health and work organization," In *Work Health and Management Control*, J. Ulf, A. Guy, and R. Robin, Eds, Stockholm: Thomson Fakta AB, 2007, pp.77-98.

[43] N. Gunningham, and R. Johnstone, *Regulating Workplace Safety: System and Sanctions*. Oxford: Oxford University Press, 1999.

[44] T. Dwyer, "A study on safety and health management at work: a multidimensional view from a developing country," In *Systematic Occupational Health and Safety Management*. K. Frick, P. L. Jensen, M. Quinlan and T. Wilthagen, Eds. Amsterdam & New York: Pergamon, 2000, pp. 149-174.

[45] G. D. Panopoulos, and R. T. Booth, "An analysis of the business case for safety: the costs of safety-related failures and the costs of their prevention," *Policy and Practice in Health and Safety,* vol.05, no.1, pp.61-74, 2007.

[46] S. Bhattacharya, "The effectiveness of the ISM Code: a qualitative enquiry," *Marine Policy,* vol. 36, pp.528-535, 2012.

[47] S. Bhattacharya, and L. Tang, "Middle managers' role in safeguarding OHS: the case of the shipping industry," *Safety Science*, vol.51, pp.63-68, 2013.

ISBN: 978-988-14047-0-1
ISSN: 2078-0958 (Print); ISSN: 2078-0966 (Online)