Experience from ISM Code as Implementation Model for the Maritime Labour Convention, 2006

Icho Seimokomoh Igwe, Ezenwa Alfred Ogbonnaya, Tolumoye John Ajoko, and ThankGod Moni Ombe

Abstract—The International Safety Management Code (ISM Code) and the Maritime Labour Convention (MLC), 2006 are international regulatory instruments to provide standards for the safe management and operation of ships, protection of marine environment, and setting forth minimum working requirements for the welfare and working conditions of seafarers. For the ISM Code, its effective implementation depends mostly on the competence and continued commitment and motivation of individuals at all levels, and the outcome envisages the enhancement of a safety culture throughout the shipping industry. This paper attempts to establish correlations between the ISM Code and the MLC, 2006 in the provisions on objectives, legislative requirements, Flag State responsibilities, Port State responsibilities, health and safety protection, accident prevention and safety management, regular inspections and analysis of non-conformities and qualifications of seafarers. Based on these, a model to enhance the implementation of the MLC, 2006 by the relevant stakeholders in the maritime sector is developed patterned on the multi-stage model of the workings of the ISM Code developed by Trapford (2009). Although not very exhaustive, the literature reviewed on the experience of the ISM Code and the model proposed could reasonably apply for MLC, 2006 as the notions, goals and objectives of the both codes are anchored on the development of a safety culture – one emphasizing safe management culture and the other safe working conditions and welfare of the seafarers.


I. INTRODUCTION

“The Sea has never been friendly to man......”. “And, besides, your modern ship makes her passages on other principles than yielding to the weather humouring the Sea. She receives smashing blows, but she advances, it is a slogging fight, and not a scientific campaign. The machinery, the steel, the fire, the steam has stepped in between the man and the Sea” (Joseph Conrad)

There are literatures on the history of modern shore based and on-board based organisations illuminating the culture within the maritime realm, and the strong empirically grounded feeling that human factors are related to the maritime environment, the ship and the human being as the base of ships operations [1].

Again, following increased sophistication of on-board equipment, complicated maintenance work, and cargo and cargo handling requirements, a lot of written instructions have to be carried on-board. This led to the development of regulatory legal instruments (codes) for safe practises, especially as related to safety, protection of the maritime environment, working conditions and welfare of the workers by international bodies like the International Maritime Organization (IMO) and International Labour Organisation (ILO).

The ISM Code and the MLC, 2006 are such instruments among others, put in place to provide international standards for the safe management and operation of ships, and for the prevention of pollution [2]; and an instrument setting forth a minimum set of requirements governing the overall working and living conditions for seafarers.

The effective and successful implementation of the ISM Code has been found to depend on certain critical factors. A model of eleven (11) such facilitating factors where postulated and empirically tested by Tundui, J and Thai, V.V.[3] These facilitating factors include the development of a maritime domain awareness rooted in safety culture, training and development of a shipping personnel, leadership and commitment of senior management across organisations and the industry, employee involvement and empowerment, enforcement capability of flag state administrations, streamlining the administration process, application of quality management principles in safety management systems, rationalisation of documentation, among others [3].

This paper will attempt to review literature on the evaluation of effectiveness of the implementation and create a correlation between the ISM Code the MLC, 2006 so as to produce a model from the experience of the ISM Code for the implementation of the MLC, 2006.

II. OVERVIEW OF THE ISM CODE AND THE MLC, 2006

A. The ISM Code

The ISM Code was borne when on 1 July 1998; the 1994 amendments to the International Convention for the Safety of Life at Sea (SOLAS), 1974 came into force. With the introduction of the chapter IX (Management for the safe operation of ships), the ISM Code was made mandatory.

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This chapter was amended by resolution of the Marine Safety Committee (MSC) of the International Maritime Organization (IMO), (MSC).99 (73), which entered into force on 1 July 2002; and further by resolution MSC 194(80), which entered into force on January 2009 [4].

Concern over poor management standards exhibited in human errors in shipping which were estimated to have caused 80% - 90% of maritime accidents, prompted the IMO Assembly to adopt Resolution A.595 (15), which called upon the MSC to develop guidelines concerning shipboard and shore-based management to ensure the safe operation of roll-on/roll-off (ro-ro) ferries after the capsizing of “The Herald of Free Enterprise” in the Dover Strait just out of the harbour of Zeebrugge in 1987 with a loss of 193 lives; the grounding of a very large crude oil tanker, the “Exxon Valdez” in Alaska in 1989; and the sinking of the ro-ro passenger ferry, the “Estonia” in 1994 with the loss of 852 lives [5], [6].

The investigation and subsequent analysis of the reports from these maritime incidents indicated that human factor was the direct cause, and those deficiencies in safety culture lie in the management of companies’ employees and ships’ crews [7]. These accidents made it apparent for the international community to acknowledge the importance of the human element and the need to promote safety culture to ensure maritime safety, and developments in the UK and the EU culminated in the convocation of the Conference of Contracting Governments to the SOLAS, 1974 Convention, held in May 1994, where chapter IX was added to the convention which makes compliance with the ISM Code mandatory.

B. Main Features

The ISM Code attempts to lay down issues concerning the safety management at sea and the prevention of pollution. It aims to ensure safety at sea, prevent human injury or loss of life, and avoid damage to the maritime environment and property [8]. In implementing the code, the shipping companies write down their own procedures, spelling out their own Safety Management Systems (SMS) in accordance with the provisions in the code. These must include, according to Beetham [8]:

- Establishing a safety and environment protection policy (SEP);
- Instructions and procedures to ensure safe operation of ships and protection of the environment in compliance with flag state and international legislations;
- Defined levels of authority and lines of communication between the ship and shore, and within the ship and shore organization;
- Procedures for reporting accidents or non-conformities;
- Procedures to prepare for and respond to emergency situations;
- Procedures for internal audits and management reviews.

The ISM Code was expected to inculcate proactive safety management attitude by requiring shipping companies to establish safeguards against all identified risks, and periodically assessing these risks from all of the companies’ activities that would endanger the seafarer, property or the maritime environment [9].

In complying with all these, it is believed that safety and standards of ships will become higher, and thus increase the overall benefit to the maritime community and the environment.

C. Assessment of the Effectiveness of the ISM Code

1) Evaluation criteria

The qualitative criteria for evaluating the effectiveness of maritime safety policy instruments were aggregated from other literature by Kuronen & Tapaninen [10], and cited in Lappalainen et al. [11]. These, as illustrated in Figure 1 and include:

- **Effectiveness and appropriateness** – the possibility of improvement to the matter that is intended to be changed;
- **Economic efficiency** – effectiveness in terms of implementation costs for the instrument and its positive impact on mitigating and minimizing risks associated against total costs;
- **Enforcement** – indication of how effective a policy instrument can be implemented barring the barriers of implementation in legal or regulatory conflicts, lack of financial or physical resources to implement the instrument, political and cultural barriers, and the lack of suitable technology [12];
- **Incentive and innovation** – relating to whether an instrument supports experimentation and implementation, encourages change, and provides incentive for improvement [13].

<table>
<thead>
<tr>
<th>TABLE 1: EVALUATION CRITERIA FOR THE ISM CODE [11]</th>
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<tr>
<td>Criterion</td>
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<td>-----------------------------</td>
</tr>
<tr>
<td>Effectiveness &amp; appropriateness</td>
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<tr>
<td>Economic</td>
</tr>
<tr>
<td>Acceptability</td>
</tr>
<tr>
<td>Enforcement</td>
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<tr>
<td>Incentive &amp; innovation effects</td>
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</tbody>
</table>

These criteria were used in their study to do
comprehensive assessment of the impacts and effectiveness of the application of the ISM Code vis à vis the primary goals of improving maritime safety and environmental protection.

2) Effectiveness Assessment of the ISM Code

Literature on whether ISM Code has met the objectives for which it was promulgated indicated that it has significantly contributed positively to maritime safety in recent years. Shipping companies and crews have become more safety conscious and environmentally concerned than in the 1990s. This notion has become a consensus in the industry although it is difficult to precisely isolate its direct effect on the operational efficiency of the vessel as any quantitative study has hardly been done on the impact of the code on maritime safety [11].

One major instrument of assessment of the effectiveness of the code is the commitment of the top management team to ensuring the application of the provisions to enhance safety. Studies by Anderson [14] suggested that shipping companies prefer to circumvent compliance at the expense of maritime safety for reasons of making short-term profits.

The effectiveness of the ISM Code could also be assessed from the ease with which its implementation and enforcement are carried out. Again, studies in this regard by Pun et al. [15] suggested that certain challenges are routinely encountered in the implementation phase of the code. These according to them include resistance to change, lack of human resources, insufficient knowledge of procedures, lack of inter-departmental communication, low level of education, frequent staff turnover and time pressure to obtain registration of the safety management system (SMS) [15]. It was their considered opinion that these challenges resulted from the mismatch between the prevailing organisational culture and the requirements of the ISM Code which hardly supports the safety oriented culture as demanded in for the successful application of the Code [11].

D. Experience Gained from the ISM Code

1) Hypothetical Approach

The target date for satisfying the requirements for the ISM Code implementation for all types of vessels was 1 July 2002. One may then ask what experience has been gained so far from the implementation of the ISM Code, the progress for maritime safety and environmental protection, and the difficulties encountered?

The shipping industry through the implementation of the ISM code is expected to have acquired the following [16]:

- Document of Compliance (DOC): Possession of the document of compliance issued by the flag state administration or a recognised organisation on its behalf is an indication of the capability of a shipping company to have complied with the requirements of the ISM code.
- Safety Management Certificate (SMC): Every single ship of the company must possess a safety management certificate as an indication that the company’s ship-board management operates in accordance with the recommended safety management system.

A shipping company may adopt different approaches to meet with the requirements of the various sections of the ISM code. Five of such approaches depending on the size, the number of ships operated and which safety management system has been adopted were examined by Kuo [16] to be able to highlight the experiences of the companies involved. It was made clear from the examination that there were many ways of meeting the requirements of the ISM code, but the effectiveness of a given approach depends on the decision of the management, and the existing management system in operation. However, for the ISM code to be truly effective, it was recommended that a common standard be applied throughout the entire shipping industry [16]. This would eliminate acrimony and disharmony that could be generated amongst the operators for the promotion of the underlying goals of the code.

2) Paris MOU Concentrated Inspection Campaigns (CIC)

The Paris Memorandum of Understanding (MOU) carried out concentrated inspection campaigns (CICs) in 2002 on the ISM code implementation and the report revealed 4.2% detentions and 0.16% outright ban from the Paris MOU region [17]. The most frequent major non-conformities were certificates and particulars not in order (14.3%), no certificates on board (14%), senior officers not able to identify designated persons (DP) (13.8%), no maintenance routine and records (13.8%), no programmes for drills and exercises to prepare for emergencies (10%) [17].

Again, from 1st of September to 30th of November, 2007 another campaign was carried out by the Paris MOU on port state control (PSC) implementation of the ISM code. And again, the report indicated non-conformities in: evidence of effective maintenance system (6.5%), evidence that the master has carried out the review of the SMS (5%), following the procedures for reporting non-conformities (NCs) (4.9%), maintenance routine including testing of critical equipment and records in SMS (3.4%), testing of procedures for emergency contact (2.3%) [17]. These figures show significant increase in deficiencies from the previous campaign (50.9%) in this category, but rather showed a decrease to 0.34% in 2008 [18].

E. The Maritime Labour Convention (MLC), 2006

1) Why MLC?

The major objectives of the IMO are to strengthen maritime safety and security, prevent pollution of marine environment and ensure that maritime activities are done in more and more efficient ways. These, the IMO has achieved to a great extent through the promulgation and adoption of several international conventions, codes or agreements such as SOLAS 1974 (International Convention for the Safety of Life at Sea) which is generally considered as one of the most important of all international conventions concerning maritime safety at sea; MARPOL 1973/1978 (International Convention for the Prevention of Pollution from Ships), adopted to cover prevention of pollution of the marine environment by ships; and STCW 1978 (International Convention on Standards of Training, Certification and Watchkeeping for Seafarers) which sets minimum requirement for training, certification and watch-keeping for seafarers as per international standards [19].

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conventions to a great extent, contributed to the enhancement and improvement of seafarers’ living and working conditions at sea.

On the other hand, the International Labour Organisation (ILO), another specialized UN Agency which focus has been on improving social and economic conditions of seafarers’, has since 1946 been dealing with social justice and labour rights of all workers including seafarers. It aims at improving the social and economic conditions of workers, and has adopted more than 180 ILO Conventions and 190 Recommendations covering all aspects of the world of work [20]. The instruments of the ILO bothering on the seafarer treat issues such as minimum age, social security, working and resting hour on-board ship, physical and mental examination, contract of employment and crew accommodation [19]. To treat these issues holistically, the ILO, in close collaboration with the IMO, consolidated its regulatory instruments to establish the MLC, 2006, designed to become the fourth pillar of maritime regulatory convention after SOLAS, MARPOL and STCW [19].

The ILO has maintained and developed a system of international labour standards aimed at promoting opportunities for women and men to obtain decent and productive work, in conditions of freedom, equity, security and dignity [21].

The MLC, 2006 was adopted on the 23 February 2006 by the ILO in response to the sustenance of this standard, as a single international legal instrument setting forth a minimum set of requirements governing the overall working and living conditions for seafarers. It was drafted to complement the international conventions on ship safety, security and quality, and the standards enshrined in the MLC, 2006 are intended to update existing ones, streamlined to ease amendment procedures for universal application and enforcement.

2) Overview of the MLC, 2006

The Maritime Labour Convention, MLC was adopted in 2006 by the ILO and has been in force since 20 August 2013. It stipulates seafarers’ right to a decent condition of work including working and living conditions, fair conditions of employment, health protection, medical care, social security protection and safe workplace that comply with minimum standards [22]. The MLC is a comprehensive document that embraces almost every aspect of the seafarers’ work including minimum age for working on ships, hours of rest or work, wage payments, medical care, accommodation and food, contract of employment, health and safety protection, paid annual leave, etc. [23]. Most of the world gross tonnage representing more than 50% of the world’s seafarers and more than three quarters of the world’s gross tonnage of ships have ratified the convention, and has become binding for all 500 gross tonnage or ships that are commercially operated [23]. Merchant ships operating in international waters are required by this convention to carry two certificates – Maritime Labour Certificate (MLC) and the Declaration of Maritime Labour Compliance (DMLC) – which certify that the ship complies with requirements of the convention [23]. These certificates are both subjected to the thorough inspection by the Flag State control in the ports of countries that have ratified the convention.

The MLC, 2006 elaborates a comprehensive code, developed over five years of tripartite international negotiations that set out the rights and responsibilities, and technical minimum standards for working and living conditions of “seafarers” in the shipping industry. The convention establishes a system based on responsibilities for flag states, port states and to a lesser degree, coastal states. The convention also introduces a new “face” for state responsibility under the law of the sea framework-that of labour-supplying responsibilities [24].

The MLC, 2006 brings together and modernizes most of ILO’s legal instruments adopted since 1920, and sets out minimum requirements for seafarers to work on ships (minimum age, medical fitness), conditions of employment (contract of employment - the seafarers’ employment agreement (SEA), minimum hours of work or rest, wages, leave, repatriation, on board accommodation, recreational facilities, food and catering, occupational safety and protection, medical care, access to seafarer welfare centres and social security protection [24].

The ILO attempts to develop a best practice culture in the MLC, 2006 under the international regulatory regime by establishing a compliance and enforcement system based on inspection and certification of labour and social conditions for seafarers carried out by maritime administrations (flag state) and complimented by the port state inspection (port state control-PSC). This is again linked to the ILO supervisory system that examines state level implementation obligations [25].

The MLC, 2006 also establishes a comprehensive system for compliance and enforcement beyond the state level to affect the private sector. This system allows for communication of complaints to flow from the individual seafarer to the flag state inspection, port state control and to ILO’s supervisory system.

III. Correlation between the ISM Code and the MLC, 2006

The IMO and ILO are both UN agencies with interrelated but different mandates and competencies. The ILO’s competence is mainly on issues relating to labour in general including maritime work, but when using its instruments on maritime safety or security, reference has to be made to IMO’s suitable conventions or recommendations, while the reverse is not obtainable [26]. The ISM Code of the IMO requires that a Safety Management System be put in place with clear cut instructions and procedures on how to ensure the safety of ship’s operations and the protection of the marine environment in line with the regulatory instruments of the international community and the flag state. This brings to fore the basic requirement of the code – the objective of the shipping company to “to offer an environment of work without danger” after determining “a risk assessment for ships, personnel and maritime environment”. Reasoning in this wise, the MLC, 2006, specifically in Regulation 4.3 and Standard A4.31a, requires “the adoption and effective implementation and promotion of occupational safety and health policies and programmes on ships that fly the Member’s flag, including risk.
The correlation between the ISM Code and MLC, 2006, modelled and as adapted from Cdt Bertrand Appery’s comparison [26], are shown in the table below:

### TABLE II: Comparison of ism CODE and MLC, 2006 [26]

<table>
<thead>
<tr>
<th>ISM Code version 2013</th>
<th>MLC 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Established in 92 but final implementation in 2002</td>
<td>Established in 2006.Entry in force 2013/14</td>
</tr>
<tr>
<td>The safety and environmental protection policy is the base of the code. The evaluation of the risks assessment and &quot;safe working environment&quot; are objectives only.</td>
<td>Policy and health/safety at work programme including risk assessment and the corresponding training of the seafarers: Regulation 4.3</td>
</tr>
<tr>
<td>The ISM code only requires the issuance and application of mandatory rules and regulations (international or national) and taking into account the other existing recommendations concerning, inter alia, the prevention of the accidents and the possible diseases due to the carriage and handling of dangerous goods for example.</td>
<td>&quot;Reasonable&quot; precautions to prevent industrial accidents, wounds and occupational diseases on board and in a non-mandatory part B 4.3; Taking into account of ILO guidelines (96) on the prevention of the accidents on board ships at sea or in port.</td>
</tr>
<tr>
<td>The code being voluntarily general can be so precise that a circular or resolution is not necessary. The entry in force of MLC 2006 presented that this aspect of the seafarers participation enters in ISM code amendments 2014</td>
<td>Onboard program for prevention with the participation of the crew. These crewmembers can be elected or named at the ship’s health and safety committee of the ship. Other interested people of the crew can apply to be part of it!</td>
</tr>
<tr>
<td>The ISM code is already clear enough on that and goes even beyond the MLC by requiring the study of near-misses and implementation of experience feedback.</td>
<td>Corrections of the dangerous situations and investigations of accidents.</td>
</tr>
<tr>
<td>The ISM code specifies the responsibilities for the Master in the application of the SMS of the company. If the SMS includes a health and safety programme at work, the loop is buckled.Cedar University</td>
<td>Master’s responsibility on the implementation of the policy and the program on health and safety at work are clearly specified in detail. A person is designated by the master to implement the program.</td>
</tr>
<tr>
<td>The ISM code does not talk about that perhaps only Regulation 9 which proposes to lay-down an objective of reinforcement of safety and a implementation of corrective measures in order to avoid recurrence. Nevertheless It is, to some extent, a continuous improvement.</td>
<td>Participation of crew’s representatives to the periodic programme review for a continuous improvement.</td>
</tr>
<tr>
<td>In the ISM code only the term “necessary physical capacity” is used. It seems necessary to force ourselves to see an &quot;adequate physical condition&quot;.</td>
<td>Problems of fatigue : Measurements of maximum workload and minimum rest in the rule 2.3 (registers) which finally are those of STCW and ILO 180 and in addition simple optional measures to be included in national guidelines at the same time as noise, temperature, vibrations or the alcohol level consumption.</td>
</tr>
</tbody>
</table>

The provisions in the MLC, 2006 which has some correlation with the ISM code which therefore, would require ship operators to prepare and implement as part of their safety management systems include medical certification, training and qualifications, hours of work and rest, manning levels and medical care on board and ashore. These requirements are subject to flag state control as well as port state inspection. A critical look into these similarities and others should reveal how the ISM code could be modelled for the implementation of MLC, 2006.

### A. Objectives

The objectives of the ISM code are to ensure safety at sea, prevention of human injury or loss of life, and the avoidance of damage to the environment [3]. The MLC, 2006 aims to bring the system of protection contained in existing labour standards closer to the workers concerned, in a form consistent with the rapidly developing, globalized sector (ensuring “decent work”) and to improve the applicability of the system [27]. The two conventions aim at supporting the development of a safety culture within the shipping industry while improving on the requirements of other international conventions.

### B. Legislative Requirements

The new chapter IX to SOLAS 1974, requires the mandatory application of the ISM Code on ships engaged in international voyages while the MLC, 2006 ensures that “each Member state implement and enforce laws or regulations or other measures that it has adopted to fulfil its commitment” (Art. V (1)) especially with the Regulations and provisions of Part A of the Code which are mandatory. As can be seen, the applications of both codes are international in nature and therefore, international legislative instruments that are mandatorily required to be enforced by all relevant stake holders in the maritime industry.

### C. Flag State Responsibilities

It is the responsibility of the flag state Administration to establish necessary national legislation under SOLAS chapter IX, to guide the proper implementation of the ISM code through the issuance of a Document of Compliance (DOC) to every company which complies with the code (Reg. 4 (1)), issue a Safety Management Certificate (SMC) to every ship after verifying that the company operates in accordance with the approved Safety Management System (SMS) (Reg. 4 (3)) and periodically verify the proper functioning of the ship’s SMC (Reg. 6(1)).

Under MLC, 2006, it is also the responsibility of the flag state to establish legislations to ensure:
- The implementation, enforcement and regulation of the convention (Art. V (1));
- Exercise effective jurisdiction and control over ships flying its flag to ensure compliance with the convention (Art. V (2));
- That ship flying its flag carry the MLC and a declaration of maritime labour compliance (DMLC) (Art. V (3));
- And to prohibit violations and establish sanctions or corrective measures in line with international law (Art. V (4)).

### D. Port State Responsibilities

In the ISM code and MLC, 2006, the role of the port state comes for the inspection, control and verification of the DOC and SMC (Reg. 6 - SOLAS Chap. IX), and for inspection for compliance with the requirements of the convention (Reg. 5.2.1, MLC, 2006). In ensuring this, it is provided that members shall accept these certificates as prima facie evidence of compliance with the two conventions.
E. Health, Safety Protection, Accident Prevention and Safety Management

Under the ISM code, the Administration ensures that before an SMC is issued to a company, it has met its functional requirement to develop, implement and maintain a SMS that should include “procedures for reporting accidents and non-conformities…” and “procedures to prepare for and respond to emergency situations” (Reg. 1.4) [3]. The MLC, 2006 on the other hand, requires Administrations to “ensure that seafarers on ships that fly its flag are provided with occupational health protection and live, work and train on board ship in a safe and hygienic environment” (Reg. 4.3.1).

F. Qualifications of Seafarers

In the MLC, 2006, Regulations 1.1, 1.2, and 1.3 clearly stipulates that the seafarer should be medically fit and be so certified, trained or certified as competent or otherwise, qualified according to the mandatory instruments adopted by the ILO to perform their duties. The ISM code also in Articles 3.2, 6.2 and 6.4, provides for the definition and documentation of the responsibility, authority and interrelation of all personnel who manage, perform and verify work relating to and affecting safety and pollution prevention, and that ship are manned with qualified, certified and medically fit seafarers in accordance with national and international requirements.

IV. MODEL FOR THE IMPLEMENTATION OF MLC, 2006

One of the main features of MLC, 2006 is the adoption of a modernized management based approach to occupational safety and health. Again, central to the ISM code is the development and implementation of a safety management system. The approach to modelling the implementation of MLC, 2006 therefore, could closely adopt the ISM code implementation model which anchored on the establishment of a safety culture in ship operations [28].

Safety culture is defined as “the attitude of employees within an organization towards managing personal, corporate or environmental safety within their sphere of work” [29]. Management systems today encourage the development of safety cultures within organisations and identify safety management systems, which are important elements in the development of safety cultures [28]. Many models have been developed to illustrate a safety culture among which is the Banduras Model of Reciprocal Determinism, which was adapted by Cooper in his Reciprocal Safety Culture Model [28]. This model comprises three interactive elements namely the person, the organization and the job, and provides how these can be measured.

The model constructed for the implementation of the MLC, 2006 in this paper is adapted from Trafford’s (2009) multi-stage model of the workings of the ISM code based on the correlations already established. The stages of the model are super imposed by five levels of safety hierarchy used as an organizing framework to determine how cultural pressures and constraints should bear upon the organizations developing and implementing MLC, 2006 in line with the SMS.

![Fig. 3. MLC, 2006 Mult-stage Implementation Model [28]](http://dx.doi.org/10.24018/ejers.2019.4.5.1082)

It would be observed from Figure 3 that the implementation process of the MLC, 2006 should be a continuum from the adoption of the convention at the international level and ratifications at national levels by member states at safety management level (1), through to its interpretation and promulgation by administrations and industry organizations at safety management level (2); its adoption as a management working tool at safety management level (3); its formulation into a concrete set of instructions and procedures at safety management level (4); and finally its transformation into positive action by shipboard personnel at level (5) where it would be taken as the ship board implementation of an operational SMS [28]. The constraints that may impact on the implementation of the safety and welfare system, and compliance with the provisions of the convention at each level are identified in the text boxes and the entire process shown in a global context.

It is noteworthy to state that the proposed model should demonstrate that each hierarchical level of safety forms a superior level of management and control to the one below it [30]. This distinction helps to clarify the effects of consultancy interventions and information feedback at the various hierarchical levels [28].

V. COMPLIANCE ASSESSMENT OF MLC, 2006

Studies by E. Akyuz et al [19] on the level of compliance by the relevant stake holders in the maritime industry on the implementation of MLC, 2006 indicated that financial perspectives such as wages, compensation for the ship’s loss

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or foundering or employment agreement conditions play serious roles in the compliance level of the convention. The need therefore, to satisfy seafarers’ thirst for these must not be undermined.

The second issue identified in the study was based on the perspective of status of the company concerned. Issues related to the health and safety protection, accommodation standards and liability, social security requirements of the company are used as tools to assess and evaluate the compliance level by the seafarers and the crew managers [19].

VI. CONCLUSION AND RECOMMENDATIONS

There are various international maritime regulatory instruments that bother on maritime safety, environmental protection and the overall wellbeing of the seafarers. The International Safety Management Code (ISM Code) and the Maritime Labour Convention (MLC, 2006) are standards promulgated on the premise of safe management and operation of ships, protection of marine environment, and setting forth minimum working requirements for the welfare and working conditions of seafarers. The effective implementation of both instruments depends on the competence and continued commitment and motivation of stakeholders at all levels, and the outcome envisages the enhancement of a safety culture throughout the shipping industry. This paper attempts to establish correlations between the ISM Code and the MLC, 2006 in the provisions on objectives, legislative requirements, Flag State responsibilities, Port State responsibilities, health and safety protection, accident prevention and safety management, regular inspections and analysis of non-conformities and qualifications of seafarers. A model to enhance the implementation of the MLC, 2006 by the relevant stakeholders in the maritime sector is developed patterned on the multi-stage model of the workings of the ISM Code developed by Trapford (2009). Based on this model, possible strategy to implement the MLC, 2006 was proposed as the notions; goals and objectives of the both codes are anchored on the development of a safety culture – one emphasizing safe management culture and the other safe working conditions and welfare of the seafarers.

This model should bring out realistic and objective solutions in the implementation of the MLC, 2006 via the management of workload and fatigue, in addition to a comprehensive health and safety program in conformity with other ILO and IMO Standards and recommendations. Maritime Nations could also enact legislations incorporating and integrating common requirements of the ISM Code and the MLC, 2006 for multiple systems covering security, safety and the environment.

In evolving an implementation strategy for the MLC, 2006, following the experience from the ISM Code, it is also recommended that maritime nations and the industry incorporate the “Guidelines on the Basic Elements of a Shipboard Occupational Health and Safety Programme” (SOHSP) as encapsulated in IMO’s Maritime Safety Committee (MSC) and the Marine Environment Protection Committee (MEPC) circular – MSC-MEPC.2/Cir.3 of 5th June 2006. This circular explicitly provides for an approach to ensuring effective SOHSP through executive management commitment and leadership; employee participation; hazard anticipation, identification, evaluation and control; training of all participants in the programme (both officers and crew members); proper record keeping; contract or third party personnel participation; fatality, injury, illness and incident investigation; and a systematic programme for evaluation and continuous improvement of the approach that has been adopted. These and other approaches are expected to provide the necessary platform for the seamless implementation of the MLC, 2006.

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