

Implementation, Compliance, and Effectiveness of Maritime Labor Convention Regulations on Work and Rest Hours

Rofel V. Jino-o¹, Christopher Paul E. Caldo², Carl Lester A. Pasilan³, Aezel F. Segovia⁴, Emeliza T. Estimo⁵

John B. Lacson Foundation Maritime University, Philippines
zelheartsegovia@gmail.com, emeliza.estimo@jblfmu.edu.ph

Abstract. Seafarers are exposed to various occupational health hazards on board ship, hence, are required to have adequate rest as fatigue has been identified a risk factor that could lead to unwanted injuries and accidents (Oldenburg, Jensen, Latza, & Baur, 2009; Oldenburg, Baur, Schlaich, 2010). In one recent study of seafarers working on board supply vessels serving the oil and gas exploration industry on the Norwegian continental shelf, Hystad, Saus, & Sætrevik (2013) found that excessive work demands influence the reported fatigue of seafarers. The right to enjoy adequate rest hours is protected by the International Labor Organization (ILO) Maritime Labor Convention (2006), which contains mandatory requirements governing maximum hours of work and minimum hours of rest for seafarers. The ILO-MLC was established as the fourth pillar of international maritime laws standing alongside Safety of Life at Sea (SOLAS), Marine Pollution (MARPOL), and Standards of Training, Certification, and Watchkeeping (STCW) Conventions adopted by the International Maritime Organization (IMO). It aims to ensure that all seafarers have the right to a safe and secure work place, clear rights to health protection, and decent working and living conditions on board ship (ISF Guidelines on the Application of the ILO Maritime Labor Convention, 2nd Edition). This descriptive study was conducted to determine the level of implementation, compliance, and effectiveness of MLC Regulations on Work and Rest Hours as experienced by cadets and seafarers who had been employed on board international vessels. Data were gathered through a set of survey questionnaires that were separately administered to six groups of respondents composed of Engine cadets, Deck cadets, Engine ratings, Deck Ratings, Engine Officers, and Deck Officers. The data gathered were analyzed and interpreted using the mean and standard deviation to determine the said objectives. Results revealed that the MLC Regulations on Work and Rest Hours is highly implemented and complied with and its level of effectiveness is high. The data further showed that despite the high implementation, compliance, and effectiveness of the MLC regulations on work and rest hours, certain problems were still experienced by the seafarers. These include lack of rest due to emergencies and inevitable operations, continuous work during maneuvering operations and transits (Deck cadets) and overhauling of machinery (Engine cadets), and shortage of manpower. Added to this, the cadets, in particular, had to apportion extended time for training and studying, as well as in responding to drills that were given during rest hours. The data also gathered reports on fiddling with records to cover certain violations on the implementation of rest hours. Moreover, the data revealed that compensatory rest hours were not granted in some vessels.

Keywords: ILO-MLC, rest hours, implementation, compliance, effectiveness, seafarer fatigue

1. Introduction

Seafaring is an occupation with specific work-related risks. Seafarers are exposed to a high diversity of occupational health hazards on board ship, hence, are required to have adequate rest as fatigue has been identified a risk factor that could lead to unwanted injuries and accidents [1]. Despite recent advances in injury prevention, accidents due to dangerous working and living conditions at sea, non-observance of safety rules and excessive work demands remain a leading cause of injury that is influenced by the reported fatigue of seafarers [2], [3].

The ILO Maritime Labor Convention (2006) is an International Labor Organization established as the fourth pillar of international maritime laws standing alongside the SOLAS, MARPOL, and STCW Conventions adopted by IMO [4]. It aims to ensure that all seafarers have the right to a safe and secure work place, clear rights to health protection and decent working and living conditions on board ship [5]. The MLC contains mandatory requirements governing maximum hours of work and minimum hours of rest for

seafarers based on ILO Seafarers' Hours of Work and Manning of Ships Convention 1996 (No. 180) [6]. All ships must maintain detailed records of work/rest hours for every individual seafarer on board to demonstrate compliance with ILO and IMO regulations. Non-compliance can result in detention [7]. Each member shall take account of the danger posed by the fatigue of seafarers, especially those whose duties involve navigational safety and the safe and secure operation of the ship. Ship owners must ensure that seafarers' working hours comply with the limits either minimum hours of rest must not be less than 10 hours in any 24 hour period, and 77 hours in any 7 day period: or maximum hours of work must not exceed 14 hours in any 24 hour period and 72 hours in an 7 day period using either option that the minimum hours of rest needed to comply must be divided into no more than 2 periods, one of these rest periods must be at least 6 hours in length, and the interval between consecutive periods of rest must not exceed 14 hours [8].

This study was conducted to determine the level of implementation and compliance of MLC Regulations on Work and Rest Hours on board ships and to verify its effectiveness as experienced by active seafarers.

2. Framework

The concept of this study is anchored on the MLC Regulation 2.3 (Hours of Work and Hours of Rest) put into force by the International Labor Organization (ILO) Convention which provides a framework for regulated hours of work, daily and weekly rest periods, and annual holidays. These regulations ensure high productivity while protecting workers physical and mental health (ILO Official Website 2015).

The respondents of this study are categorized into two departments: Deck and Engine. Both departments include seafarers such as cadets, ratings, and officers. This study aimed to determine the level of implementation, compliance, and effectiveness of the said regulation as experienced by these groups of seafarers.

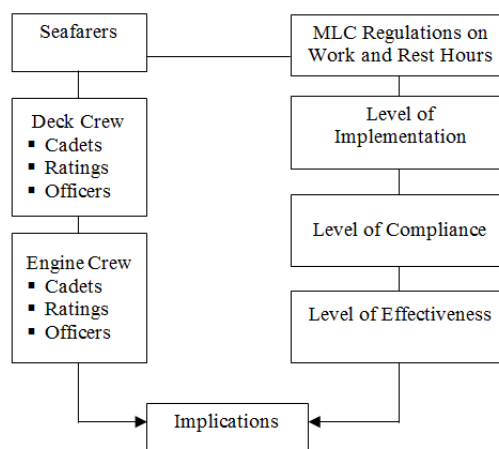


Figure 1 *Paradigm of the Study*

3. Objectives

This study aimed to determine the level of implementation, compliance, and effectiveness of MLC Regulations on Work and Rest Hours on board ships. Specifically, it sought to answer the following questions: (1) What is the level of implementation of the MLC Regulations on Work and Rest Hours as experienced by the seafarers? (2) What is the level of compliance of the MLC Regulations on Work and Rest Hours as perceived by the same groups of crew? (3) What is the level of effectiveness of the MLC Regulations on Work and Rest Hours according to their perceptions? and (4) What are the experiences of the seafarers on board related to the implementation of the MLC Regulations on Work and Rest Hours?

4. Methodology

The descriptive design using quantitative and qualitative approaches was used in this study. The survey method and interview were used to gather the data. The respondents for the study were composed of 40 Filipino cadets consisting of 20 Deck cadets and 20 Engine cadets who had worked as apprentices on

board for at least 12 months; and 40 active Filipino seafarers composed of 10 Deck officers, 10 Engine officers, 10 Deck ratings and 10 Engine ratings. Five respondents from each group were selected for the interview. The survey was conducted between August 27, 2015, and December 2016. All respondents were obtained through purposive sampling. A researcher-made survey questionnaire and interview guide which was validated by three experts in the field was used to gather the data. Its reliability was tested using Cronbach's Alpha. The mean and standard deviation were used to determine the level of implementation, compliance, and effectiveness of the MLC Regulations on Work and Rest hours as evaluated by the respondents.

Aside from the data computed from the seafarers' perception on the level of implementation, compliance, and effectiveness of MLC Regulations on Work and Rest hours, responses were gathered and transcribed to cite the experiences of selected seafarers who were selected for the interview. Answers were encoded, and thematic analysis was employed to allow the issues and concerns presented to emerge. Thematic analysis was done by first reading through the data, getting a feeling for what is being said, and identifying key themes and issues in each text.

5. Results

This section of the paper presents and discusses the results from the data gathered and the analyses conducted according to the sequence of the problems raised in this study. Various statements expressed by the participants during the interview are also presented here based on the themes of experiences that had emerged.

5.1 Level of Implementation, Compliance, and Effectiveness of the MLC Regulations on Work and Rest Hours

As a whole, Table 1 reveals that the Engine ratings' perception of the level of implementation of the MLC Regulations on Work and Rest Hours is higher than those of the other groups of respondents with respect to their departments having a mean score of 4.46 which is interpreted as "fully implemented." This implies that the engine ratings fully avail of the work and rest hours all the time.

The deck cadets and deck ratings obtained mean scores that are interpreted as "highly implemented." This means that the regulations on rest hours are implemented but not on all occasions. One of the deck cadet respondents quoted, *"Well, regarding rest hours, shipping is hard, but most of the time we comply with the necessary rest needed. It's just that, of course, there are personal factors like things you have to do during rest hours like washing your clothes and eating. Because of these, we cannot avoid not getting enough rest, but regarding rest hours allotted for the seafarers, most of the time we get enough rest needed."*

Table 1 Level of implementation of the MLC regulations on work and rest hours as perceived by the seafarers

Group	SD	Mean	Interpretation	Description
Deck Cadets	.70	3.92	Highly Implemented	Implemented in most occasions with everyone on board.
Engine Cadets	.48	4.32	Fully Implemented	Implemented at all times in all situations with everyone on board.
Deck Ratings	.51	3.74	Highly Implemented	Implemented in most occasions with everyone on board.
Engine Ratings	.39	4.46	Fully Implemented	Implemented at all times in all situations with everyone on board.
Deck Officers	.53	4.28	Fully Implemented	Implemented at all times in all situations with everyone on board.
Engine Officers	.41	4.36	Fully Implemented	Implemented at all times in all situations with everyone on board.

The mean scores shown in Table 2 indicate that, as a whole, the regulation is highly complied with onboard the ship. The highest perceptions are those of the Engine ratings and the Engine officers, which imply that, for them, everyone on board complies with it at all times in all situations. The rest of the respondents only think of it as highly complied, which implies that there are instances on board when the regulations are not strictly followed.

Table 2 Level of compliance with the MLC Regulations on work and rest hours as perceived by the seafarers

Group	SD	Mean	Interpretation	Description
Deck Cadets	.64	3.97	Highly Complied	Complied in most occasions with everyone on board.
Engine Cadets	.54	3.97	Highly Complied	Complied in most occasions with everyone on board.
Deck Ratings	1.04	3.53	Highly Complied	Complied in most occasions with everyone on board.
Engine Ratings	.37	4.60	Fully Complied	Complied at all times in all situations by everyone on board.
Deck Officers	.57	4.15	Highly Complied	Complied in most occasions with everyone on board.
Engine Officers	.66	4.28	Fully Complied	Complied at all times in all situations by everyone on board.

Table 3 reports that as a whole, the seafarers consider the implementation of the MLC Regulations on Work and Rest Hours as highly effective. This implies that, as a whole, they found it working on most occasions. This also means that there are instances when the implementation of these regulations is not effective. In his statement, one of the respondents revealed,

“Our ship keeps a record of work and rest hours of us on board through the computer software called DNV Navigator. But this record is not updated and properly maintained since the ... (identity withheld) said that he would be the one to update it so that we will not be caught having violations when in port. He would just reflect there our regular working time but not our actual overtime...”-Respondent 12

Table 3 Level of effectiveness of the MLC Regulations on work and rest hours as perceived by the seafarers

Group	SD	Mean	Interpretation
Deck Cadets	0.98	3.72	Highly Effective
Engine Cadets	0.60	4.02	Highly Effective
Deck Ratings	0.79	3.49	Highly Effective
Engine Ratings	0.69	4.24	Very Highly Effective
Deck Officers	0.77	4.11	Highly Effective
Engine Officers	0.60	4.31	Very Highly Effective
Total	0.74	3.98	Highly Effective

5.2 Experiences of Seafarers in Relation to MLC Regulations on Work and Rest Hours

In addition to the seafarers' perception on the level of implementation, level of compliance, and level of effectiveness of the MLC Regulations on Work and Rest Hours, this study also investigated on their experiences in relation to these regulations. Data for this purpose were gathered through a face-to-face interview with five focal persons from the group of deck cadets, engine cadets, deck ratings, engine ratings, deck officers, and engine officers who had been directly affected by such regulations.

Table 4 Thematic report of the experiences of seafarers which emerged during the interview

	Deck Cadets	Engine Cadets	Deck Ratings	Engine Ratings	Deck Officers	Engine Officers
Insufficient rest due to emergencies and inevitable operations, e.g., maneuvering operations and transits, overhauling and additional assistance in the machinery	✓	✓	✓	✓	✓	✓
Extra time allotted for the training and studies of cadets	✓	✓				
Drills and meetings during rest hour periods			✓			
Fiddling with records to conceal violations			✓		✓	
Insufficient compensatory rest in some vessels				✓	✓	✓

Insufficient rest due to emergency situations and inevitable operations. Table 4 reports a common experience among seafarers in relation to work and rest hours, that is, insufficient rest due to emergency situations and inevitable operations such as maneuvering operations and transits, overhauling, and additional assistance in the machinery. The data further revealed that despite the high implementation, compliance, and effectiveness of the MLC regulations on work and rest hours on board ships, there are instances when violations happen, and that internal arrangements are being made and understood among the crew involved to cover these violations during vetting inspections.

The following testimonies were recorded during the interview and transcribed verbatim. In conformance to research ethics, the identities of individuals, whether directly or indirectly mentioned, as well as sensitive issues not to be mentioned publicly, are intently withheld.

"I had worked for more than fourteen hours in one day. In that operation, we had provisions, services on the ship and were short of manpower so I exceeded to fourteen hours of work in a twenty-four hour period." – Respondent 1

"As far as I can remember, I had worked for 18 hours because of berthing schedules, preparation for inspection and anchorage." – Respondent 8

"I experienced working more than 14 hours a day, and it was an emergency, and we needed to overhaul our main engine before departure because we had to change the main engine's piston. Right after that, I was able to rest for only two hours because we were called to the engine room to attend to our duties for the departure of the vessel." – Respondent 21

Extra time allotted for the training and studies of cadets. Table 4 also shows that, in the case of the cadets, extra time needs to be allocated for continuous training and studying. Cadets are required to undergo training on board to complete the educational requirements for a maritime degree (DOLE Department Order No. 130, 2013). On board, they needed to allow time to accomplish it aside from their actual working hours. For the cadets, Sundays and holidays are also opportunities for them to learn more on the bridge and in the Engine Room.

Drills and meeting held on Sundays. Another concern reported in Table 4 is that of the schedules of drills and meetings on board which affect their rest hours. According to their testimonies, drills and meetings are usually conducted during working hours. Due to overload of work and a lot of maintenance given by the ship management, they are specially scheduled on Sundays when they are supposed to be resting. This practice goes in contrary to the Conditions of Employment of Hours of Work and Hours of Rest

which states, "Musters, fire-fighting and lifeboat drills, and mandatory drills, must be conducted in a manner that minimizes the disturbance of rest periods and does not induce fatigue." [10]

Fiddling with records to conceal violations. Testimonies were also gathered during the interview as regards what they call as "fiddling with records to conceal violations." Although the respondents did not elaborate on this considering the issue to be controversial and sensitive, they implied that measures are usually done on board to cover for the violations that are made relative to work and rest hours.

Bhargava (2016) offers a related term for this. He explains that indeed, there are violations of rest hours, practically on most ships and that the only corrective action followed on board is **fudging of rest hours**, leaving the crew extremely fatigued, overworked, anxious and in an intoxicated like situation due to lack of sleep. He presented several reasons why this is done on board ships. One of this is "short manning" or ship owners restricting crew to numbers as per minimum manning certificate. According to him, this cost-cutting measure naturally puts additional workload on crew and additional hours are worked to meet the deadlines. This point of view was affirmed by the respondents in the following statements during the interview.

"Because of cost cutting, some vessels lack the required number of crew onboard which resulted in insufficient manpower. This is experienced by some ships in doing certain jobs. As a consequence, other deck ratings are required to assist in finishing the job even if it is their time to rest."-Respondent 25

"I had this experience during our transit in Panama Canal. The Captain gave us an emergency order to stow six loose ropes on the forecandle and poop deck. In our ship, there was only one Pumpman, one Bosun, three ABs and a deck cadet, so we did not have an OS to help us, and one AB was resting well because he would then be in charge of steering the ship. We started working at 10 pm so that's the start of heaving up the anchor and we ended up resting the next day until we finished the transit in the Panama Canal, so it was more than 24 hours of working. There were still a lot of situations where we experienced too much lack of rest and over fatigue."-Respondent 26

Insufficient compensatory rest. Paragraph 13 under Standard A2.3 of the ILO Handbook Guidance on implementing the Maritime Labour Convention, 2006 provides, "The competent authority may authorize or register collective agreements permitting exceptions to the limits set out. Any exceptions shall, as far as possible, follow the standards set out in this but may take account of more frequent or longer leave periods or the granting of compensatory leave for watchkeeping seafarers or seafarers working on board ships on short voyages." The data from the interview revealed that their vessels are adherent to providing the crew compensatory rest hours. However, in some vessels, compensatory rest hours are not adequately provided. According to their officers, this happens because there is only one officer on board assigned to do the job, so no matter how difficult, the job still needs to be done. The claimed reports on insufficient compensatory rest could be attributed to inadequate number of manpower to handle critical work in some vessels.

6. Conclusions

Seafarers are exposed to dangers posed by fatigue especially those whose duties involve the safe and secure operation of a ship. The implementation of the ILO-MLC 2006, particularly Regulation 2.3 on Hours of Work and Hours of Rest is intended to ensure that seafarers have regulated hours of work or hours of rest. According to this regulation, "establishing either maximum hours of work or minimum hours of rest is essential in order to protect seafarers against fatigue due to excessive demands on their time and to ensure in the interests of safety, that hours of work and overtime (even if voluntary), in particular, does not exceed levels that are compatible with the safe and efficient discharge of duties on board (p. 24)." However, even if this regulation has been found to be highly implemented, highly complied with, and highly effective in most of the ships of varying types and routes, there are still instances and situations when the terms of these regulations are not perfectly met, thereby still exposing seafarers to excessive work and inadequate rest hours. In heavy situations and critical operations, excessive time can still be required from the crew, regardless of whether they are properly rested or not. There seems to be a need for alternative measures to

fully ensure that all the crew gets adequate rest as protected by the regulation, particularly during emergency situations and inevitable operations. And because there are still reports where adherence to the regulation is not practiced, a more stringent implementation and monitoring needs to be imposed to prevent fudging of rest hours and seafarer fatigue.

7. Recommendations

Leaning on the results of this study, it is recommended that, as much as possible, reorientation on the Regulations on Work and Rest Hours should be provided before seafarers, particularly cadets, are sent on board so that they could gain information about their rights, and awareness on the management of fatigue. A more transparent record of work and rest hours should be observed, maintained and updated so that seafarers who have worked more than their maximum required hours will not be overlooked and will be given hours of compensatory rest. The implementation of seafarer's maximum work hours and minimum rest hours should be reported clearly to the ship owners so that the problem of shortage in manpower will be addressed and acted upon. There is also a need for management officers on board to provide appropriate guidance to the crew about these regulations in hours of work and rest and manage these appropriately. In situations where long transit periods are expected, the management team should allocate enough rest prior to the commencement of the transit, and distribute equally the workloads to all available manpower to lessen the magnitude of individual fatigue. Whenever and wherever possible, drills, mustering and meetings on board should be scheduled by the Master within the crew's working period in order to minimize disturbance to rest periods. In cases where excessive workloads cannot be avoided and drills should be urgently complied, advance planning of the job allocation and training period should be done to avoid disturbance in work hours. Additional crew members can help minimize the inadequate rest hour of seafarers on board for they can take turns in undertaking different duties, jobs and responsibilities.

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