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Impact of Maritime Labour Convention on design of new ships

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Abstract

Purpose – The Maritime Labour Convention (MLC) embodies standards of existing international maritime labour conventions and recommendations, as well as the fundamental principles to be found in other international labour conventions. The aim of the convention is to address the employment standards of seafarers in the areas of fair wages, contractual terms, working and living conditions, as well as their health and safety on board ships. The purpose of this paper is to provide an in-depth study of MLC Regulation 3.1, specifically on the layout design of the accommodation spaces and possible solutions to meet the new demands as those will certainly affect the crew comfort, health and well-being on board ships.

Design/methodology/approach – The approach used includes a review of pre- and post-MLC conventions and regulations. This is then followed by looking at the impact of MLC Regulation 3.1 on new ship design. Possible solutions for new ship design are then proposed.

Findings – The findings from the paper were as follows: More flexibility in the form of non-mandatory guidelines and substantial equivalence under MLC. Under MLC, only Special Purpose Ship (SPS) is allowed to accommodate four persons in one room. The requirement for increased height and floor spaces would result in increased gross register tons (GT) for post-MLC built vessels. Impact due to post-MLC requirements would be more unfavourable for the design of smaller vessels below 500 GT than of bigger vessels of up to less than 3,000 GT. Possible solutions include applying for exemptions and substantial equivalents with flag states or registering with a non-ratifying flag state.

Originality/value – This paper has been based on a dissertation carried out for the partial fulfilment of a post-graduate degree. It has not been published in any journal.

Keywords Regulation, Convention, Accommodation, Labour, Maritime, MLC

Paper type General review

1. Introduction

The Maritime Labour Convention (MLC) is an instrument of the International Labour Organization (ILO) adopted on 23 February 2006 in Geneva, Switzerland. It embodies standards of existing international maritime labour conventions and recommendations, as well as the fundamental principles found in other international labour conventions (ILO, 2006).

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The authors would like to acknowledge that it is not easy to find a convention that suits every country in the world and that the MLC is a comprehensive international framework in place which has addressed employment standards and social justice. However, the authors would like to recommend to the ILO to reconsider the floor areas for smaller vessels, especially those below 500 GT. The floor area requirements for these ships are the same as the floor space requirements for ships of up to less than 3,000 GT, and as such this has penalised the owners of smaller vessels that are below 500 GT.



According to the ILO, the purpose of MLC Regulation 3.1 is to ensure that seafarers have decent accommodation and recreational facilities on board that are consistent with promoting the seafarers' health and well-being (ILO, 2006). It can be argued that MLC Regulation 3.1 could be indirectly linked to the safety of a ship as the environmentally catastrophic grounding of the Exxon Valdez in Alaska in 1989 might be due to the fatigue of the deck watch keeping officer on duty (Hetherington *et al.*, 2006).

The aim of this paper is to provide an in-depth study of MLC Regulation 3.1, specifically on the layout design of the accommodation spaces, as this could affect the crew comfort and well-being on board. This paper is organised into five main sections: Introduction, Review of pre- and post-MLC, Impact of MLC Regulation 3.1, Possible Solutions and Conclusion.

2. Review of pre- and post-MLC

2.1 Background

The date of entry into force for the Member state is significant because under Paragraph 2 of MLC Regulation 3.1, the requirements in implementing are as follows:

This Regulation which relate to ship construction and equipment apply only to ships constructed on or after the date when MLC comes into force for the Member concerned. For ships constructed before that date, the requirements relating to ship construction and equipment that are set out in the Accommodation of Crews Convention (Revised), 1949 (No. 92), and the Accommodation of Crews (Supplementary Provisions) Convention, 1970 (No. 133), shall continue to apply to the extent that they were applicable, prior to that date, under the law or practice of the Member concerned. A ship shall be deemed to have been constructed on the date when its keel is laid or when it is at a similar stage of construction (ILO, 2006).

The dates of entry into force of the Member States differ other than the first 30 Member States to ratify the MLC; hence, for ease of comparison in this paper, 20 August 2013 is used as the MLC's date of entry into force and any date before that would be considered as pre-MLC and any date after that as post-MLC. A ship with its keel laid post-MLC would be considered a "new ship" in this paper.

2.2 Accommodation of Crews Convention (Revised), 1949 (ILO No. 92)

ILO No. 92 was adopted by ILO on 18 June 1949 and entered into force on 29 January 1953 (ILO, 1949).

2.2.1 Applicability. The convention is applicable to every sea-going mechanically propelled vessel of 500 gross register tons (GT) or more that is not engaged in fishing, whaling or similar pursuits, and is registered in a territory for which the convention is in force. Under Article 2(g) of ILO No. 92, "the term crew accommodation includes such sleeping rooms, mess rooms, sanitary accommodation, hospital accommodation and recreation accommodation as are provided for the use of the crew" (ILO, 1949).

2.2.2 Summary of requirements.

(1) Requirements for sleeping rooms:

- Sleeping rooms should be situated above the load line amidships or aft. In exceptional cases such as in an offshore support vessel (OSV), they may be permitted to locate in the fore part of the ship, but in no case forward of the collision bulkhead.
- Sleeping rooms for passenger ships can be located below the load line, but not immediately beneath working alleyways.

- Depending on the GT of the vessel, minimum floor area per person for ratings should be provided. Flag state may reduce the minimum floor areas if the ship is required to use a substantially large number of ratings than normal.
 - The required clear head room in crew sleeping rooms should be at least 190 cm and the minimum inside dimensions of a berth must be at least 190 cm × 68 cm.
 - There are requirements for the maximum number of persons that are allowed to occupy sleeping rooms based on their ranks such as officers in charge of a department, navigating and engineer officers in charge of a watch, senior radio officers and operators, petty officers and other ratings.
 - Each occupant should be provided with a clothes locker with a minimum height of 152 cm (1.52 m) and cross-section area of 19.30 dm² (0.193 m²). This would be approximately 0.294 m³ (1.52 × 0.193) or 294 L. A drawer or equivalent space of minimum volume of 0.056 m³ or 56 L should also be provided.
- (2) Requirements for mess rooms:
- Depending on the GT, there are conditions for separate mess rooms for masters, officers, petty officers and other ranks, including persons in the catering department.
 - Mess rooms should be located away from the sleeping rooms and as close as possible to the galley.
- (3) Requirements for sanitary accommodation:
- Depending on the GT, there are minimum numbers of required separate water closets.
 - Other minimum sanitary facilities include tub or shower bath, and wash basins for all members of the crew who do not occupy rooms with attached private facilities.
- (4) Requirements for hospital accommodation:
- Any ship carrying a crew of 15 or more and engaged in a voyage of more than three days' duration is required to have a separate hospital accommodation used for medical purposes only.
 - Toilet facility for the exclusive use of the occupants of the hospital accommodation should be provided.
 - The flag state will prescribe the number of hospital berths required and may relax the requirement for hospital accommodation for vessels engaged in coastal trade.
- (5) Requirements for recreation accommodation:
- Recreation facility should be conveniently situated and if in the mess room, should be furnished and equipped.

2.3 Accommodation of Crews (Supplementary Provisions) Convention, 1970 (ILO No. 133)
ILO No. 133 was adopted by ILO on 30 October 1970 to provide further improvements in crew accommodation and entered into force on 27 August 1991. Countries that ratify ILO No. 133 have also ratified and comply with the provisions of ILO No. 92 (ILO, 1970). The opposite does not apply if a country has only ratified ILO No. 92.

2.3.1 Applicability. The convention applies to every sea-going mechanically propelled vessel of 1,000 GT or more that is not engaged in fishing, whaling or similar pursuits; is not

a hydrofoil and air-cushion craft; and is registered in a territory for which the convention is in force (ILO, 1970).

2.3.2 Summary of requirements

- (1) General requirements for accommodation spaces:
 - The minimum headroom in all crew accommodation should be at least 198 cm. It is 8 cm more than ILO No. 92.
 - Flag state may permit limited headroom reduction if it is satisfied that the reduction is reasonable.
- (2) Requirements for sleeping rooms:
 - Depending on the GT, the minimum floor area per person for ratings should be provided, which is larger than that stated in ILO No. 92 for similar GT range. For example, in ships of 1,000 GT or over but less than 3,000 GT, the minimum floor area per person is 3.75 m² in ILO No. 133 compared to 2.35 m² for the same GT range in ILO No. 92. It is almost 60 per cent more.
 - There is also a provision for sleeping rooms with two ratings; the minimum floor area per person for the same GT range is 2.75 m² in ILO No. 133. It is 17 per cent more than the area of 2.35 m² for the same GT range in ILO No. 92, and would be more applicable as ratings are seldom allocated an individual sleeping room.
 - The number of ratings per sleeping room should not exceed two persons per room, except in passenger ships where the maximum number can be four.
 - The number of petty officers occupying sleeping rooms should be one or two persons per room, and should not exceed two persons per room.
 - For bigger ships of 3,000 GT or over, the chief engineer officer and the chief navigating officer should have, in addition to their sleeping room, an adjoining sitting room or day room. Although not clearly stated for the Master, it can be assumed that the Master would already have an adjoining living room or day room, in addition to his sleeping room.
 - The minimum inside dimensions of a berth in ILO No. 133 should be 198 cm × 80 cm, which is bigger than the berth in ILO No. 92 (190 cm × 68 cm).
- (3) Requirements for mess rooms:
 - The minimum floor area of mess rooms for officers and for ratings is 1 m² per person of the planned seating capacity. There is no minimum floor area of mess rooms in ILO No. 92.
- (4) Requirements for sanitary accommodation:
 - Minimum of one water closet and one tub and/or shower bath for every six persons or less in ILO No. 133 as compared to every eight persons or less in ILO No. 92.
 - Separate sanitary facilities if women are employed are stated in ILO No. 133, which is missing in ILO No. 92.
 - Bigger ships of 5,000 GT and above should be provided with attached private bathrooms to the individual sleeping rooms of officers.
- (5) Requirements for recreation accommodation:
 - The requirements for recreation accommodation in ILO No. 133 are more detailed and include a minimum of bookcase and other facilities for reading, writing and, where practical, for games.

- Ships of 8,000 GT and above should be provided with a smoking room or library room in which films or television may be shown as well as a hobby and games room.
- There is even a consideration for the provision of a swimming pool and a canteen.

2.4 Post-MLC accommodation spaces (MLC regulation 3.1)

2.4.1 *Applicability.* MLC Regulation 3.1 applies to a new ship that is at least 200 GT only if it is a “ship other than one which navigates exclusively in inland waters or waters within, or closely adjacent to, sheltered waters or areas where port regulations apply” (ILO, 2006).

There was a question of whether MLC applies to offshore resource extraction such as Mobile Offshore Drilling Units (MODU) or vessels that are not self-propelled. According to the ILO, this will “depend on two factors: whether the vessel is considered a ship under the relevant national law and the location of its activities” (ILO, 2012). It shows the flexibility of ILO in allowing the flag state to decide if MLC applies to such ship types registered with it. It has resulted in countries such as Panama and Liberia declaring that MLC is not applicable to MODU (PMA, 2012; LMA, 2014). United Kingdom is, however, treating a self-propelled MODU as a ship and MLC will be applicable (MCA, 2013).

2.4.2 *Flexibility.* Besides the above example, according to the ILO, there are two main areas that allow a considerable degree of flexibility in the way a Member state implement the MLC: Non-Mandatory Part B and Substantial Equivalence.

2.4.2.1 Non-mandatory part B. The regulations and the provisions of Part A are mandatory, while the provisions of Part B are non-mandatory guidelines for implementation. The mandatory requirements of Part A are also formulated in a more general way, “thus leaving a wider scope for discretion as to the precise action to be provided for at the national level” (ILO, 2006).

2.4.2.2 Substantial equivalence. A “Member which is not in a position to implement the rights and principles in the manner set out in Part A of the Code may [...] implement Part A through provisions in its laws and regulations or other measures which are substantially equivalent to the provisions of Part A”.

2.4.3 Summary of requirements

- (1) General requirements for accommodation spaces:
 - The minimum headroom in all seafarer accommodation should be at least 203 cm. It is 5 cm more than in ILO No. 133 and 13 cm more than in ILO No. 92. However, again there is a provision for the flag state to permit limited reduction if it is satisfied that the reduction is reasonable.
 - Similar to ILO No. 92, there is a requirement for sleeping rooms to be situated above the load line amidships or aft, except that in exceptional cases, sleeping rooms may be located in the fore part of the ship, but not forward of the collision bulkhead.
 - For passenger ships, and in ships constructed in compliance with the IMO Code of Safety for Special Purpose Ships (SPS Code), the flag state may permit the location of sleeping rooms below the load line, but they cannot be located immediately beneath working alleyways.
- (2) General non-mandatory guidelines for accommodation
 - Some of ILO No. 92 requirements are found in the non-mandatory MLC guidelines for accommodation. Examples are adequate insulation from heat,

and materials used for bulkhead and deck head construction should not harbour vermin.

- (3) Requirements for sleeping rooms:
 - Depending on the GT, minimum floor areas in single berth seafarers' sleeping rooms are to be provided. These minimum floor areas are bigger than those stated in ILO No. 133 for similar GT range. For example, in ships of less than 3,000 GT, the minimum floor area per seafarer is 4.5 m² in MLC 2006, as compared to 3.75 m² for the same GT range in ILO No. 133.
 - For sleeping rooms with two seafarers, the minimum floor area for the same GT range is 7 m² or 3.5 m² per seafarer as compared to 2.75 m² in ILO No. 133. Similar to ILO No. 133, there are provisions for flag state to allow a reduced floor area on ships of less than 3,000 GT, passenger ships and special purpose ships.
 - Each occupant should be provided with a clothes locker with a minimum of 475 L and a drawer or equivalent space of not less than 56 L. This clothes locker is more than 60 per cent bigger than the clothes locker (294 L) required in ILO No. 92.
- (4) Non-mandatory guidelines for sleeping rooms:
 - Some of ILO No. 92 requirements are found in the non-mandatory MLC guidelines for accommodation. An example is that space occupied by berths and lockers, chests of drawers and seats should be included in the measurement of the floor area.
- (5) Requirements for mess rooms:
 - The requirements for mess rooms in MLC are very general such as mess rooms have to be located apart from the sleeping rooms and as close as practicable to the galley. There is no minimum floor area unlike ILO No. 133 that has a minimum requirement of 1 m² per person of the planned seating capacity.
- (6) Non-mandatory guidelines for mess rooms:
 - An example of ILO No. 92 requirements found in the non-mandatory MLC guidelines for mess rooms is the separate mess rooms for master and officers as well as petty officers and other seafarers.
 - There is also a non-mandatory guideline for a minimum floor area of 1.5 m² per person of the planned seating capacity as compared to a minimum requirement of 1 m² per person in ILO No. 133.
- (7) Requirements for sanitary facilities:
 - Similar to ILO No. 133, there is a requirement in MLC for a minimum of one toilet and one tub and/or shower bath for every six persons or less.
- (8) Non-mandatory guidelines for sanitary facilities:
 - Some examples of ILO No. 92 requirements found in the non-mandatory MLC guidelines for sanitary facilities are bulkheads should be of steel or other approved material and should be watertight up to at least 23 cm above the level of the deck.
 - An ILO No. 133 requirement for laundry facilities is also found in the non-mandatory MLC guidelines for sanitary facilities.
- (9) Requirements for hospital accommodation:
 - The MLC requirement for hospital accommodation is similar to the requirement found in ILO No. 92.

- (10) Non-mandatory guidelines for hospital accommodation:
- ILO No. 92 requirements as discussed in Section 2.2.2 d of this article are found in the non-mandatory MLC guidelines for hospital accommodation. An example is a sanitary facility for hospital accommodation.
- (11) Requirements for recreational facilities:
- The MLC requirements for recreational facilities are general and non-specific.
- (12) Non-mandatory guidelines for recreational facilities:
- Some examples of ILO No. 133 requirements found in the non-mandatory MLC guidelines for recreational facilities are that furnishings for recreational facilities should as a minimum include a bookcase and facilities for reading, writing and, where practical, games.

3. Impact of MLC regulation 3.1 on new ship design

3.1 Principal dimensions of new ship

According to MLC Standard A3.16(a), the minimum permitted headroom in all seafarer accommodation shall not be less than 203 cm. This MLC requirement is 5 cm more than that in ILO No. 133 and 13 cm more than that in ILO No. 92. Depending on the location of the crew accommodation, this could result in either an increased height of the deckhouse and/or depth of a post-MLC vessel to meet this requirement.

However, there is also a degree of flexibility for this requirement of 203 cm headroom under the same MLC standard, as “a competent authority may permit some limited reduction in headroom in any space, or part of any space, in such accommodation where it is satisfied that such reduction:

- is reasonable; and
- will not result in discomfort to the seafarers (ILO, 2006).

The requirements for increased floor spaces such as MLC Standards A3.19(f), (h), (i), etc. could either result in increased length and/or breadth of a post-MLC vessel or reduced commercial capacities such as cargo or passengers. According to the Regulatory Policy Committee (RPC) of the United Kingdom in its impact assessment of the MLC, the preferred approach would vary depending on the type of new ship built (RPC, 2014).

Should owners decide to order larger ships regarding length, breadth, depth and/or bigger deckhouses to meet the above MLC requirements without sacrificing commercial capacities, then the GT of such ships would increase. According to Regulation 3 of the International Convention on Tonnage Measurement of Ships, 1969 (TM 69) of IMO, the GT of a ship shall be determined by the following formula (IMO, 1969):

$$GT = K_1 V$$

where V = Total volume of all enclosed spaces of the ship in cubic metres; and $K_1 = 0.2 + 0.02 \log_{10} V$.

K_1 is the multiplier based on ship's volume and its value can also be obtained by linear interpolation using the values tabulated in Appendix 2 of the TM69 Convention.

Enclosed spaces are defined under Regulation 2 of the TM69 Convention as follows:

[...] all those spaces which are bounded by the ship's hull, by fixed or portable partitions or bulkheads, by decks or coverings other than permanent or movable awnings. No break in a deck, nor any opening in the ship's hull, in a deck or in a covering of a space, or in the partitions or

bulkheads of a space, nor the absence of a partition or bulkhead, shall preclude a space from being included in the enclosed space (IMO, 1969).

3.2 On the design of smaller vessels below 500 GT

MLC applies to smaller vessels such as 200 GT onwards that go on international voyages compared to ILO No. 92 (vessels of 500 GT and above) and ILO No. 133 (vessels of 1,000 GT and above).

A study conducted on a 247 GT ocean going tug built pre-MLC shows that such a vessel can accommodate up to 12 seafarers with two single-berth cabins, three double-berth cabins and one four-berth cabin. Prior to MLC, this vessel does not even need to comply with ILO No. 92.

If a sister vessel were to be built post-MLC, even if the floor areas of the sleeping rooms are able to meet the requirements of MLC, the four-men sleeping room will not be able to comply. This is because under MLC Standard A3.1.9(h), sleeping rooms in ships of less than 3,000 GT other than passenger ships and special purpose ships may be occupied by a maximum of only two seafarers.

Another non-compliance is that under MLC Standard A3.1.9(k), it can be inferred that each seafarer performing the duties of ships' officers is to be provided with a single-berth cabin. Assuming that there are only three officers (Master, Chief Engineer Officer and Chief Navigating Officer) in the minimum safe manning requirement for such a vessel, there will be a shortage of one single-berth cabin.

Without increasing the vessel's dimensions to allow for the addition of cabins and assuming that the floor areas of all the sleeping rooms are sufficient for MLC, the four-men sleeping room could be redesigned as a two-men sleeping room, and one of the two-men sleeping rooms could be redesigned as a single-berth sleeping room. However, this means that the vessel can now only accommodate nine seafarers instead of 12 and may not be able to meet the minimum safe manning requirements of the flag state it is registered with.

3.3 Design of offshore support vessels that are non-SPS and below 3,000 GT

The 2008 SPS Code was developed by the IMO for specialised types of ships that may have an unusual design and operational characteristics, which differ from those of conventional merchant ships such as passenger ships. Such specialised vessels are also likely to carry more than 12 special personnel, who are neither crew members nor passengers as defined in the SOLAS Convention (IMO, 2008) and are not able to comply with the SOLAS requirements for passenger ships. However, as the code is voluntary, there are pre-MLC built vessels that have accommodation for more than 12 special personnel, but are not SPS Code compliant.

A study on the crew accommodation spaces of a 1671 GT Subsea Support Vessel built pre-MLC shows that the vessel can accommodate up to 50 persons with four single-berth cabins, five double-berth cabins and nine four-berth cabins. The ship designer has designed the accommodation for 14 crew and 36 special personnel. Assuming that the vessel is non-SPS Code compliant, then such a vessel if it were to be built post-MLC would not be able to meet both MLC Standards A3.1.9(h) and A3.1.9(j) requirements. To comply with the abovementioned MLC requirements for a post-MLC sister vessel and assuming that the floor areas of all the sleeping rooms are sufficient for MLC, such a vessel would need to comply with the SPS Code. Once it can obtain the class notation of SPS, then there won't be a need to make changes to the layout design of the accommodation spaces.

3.4 Design of large passenger ships

According to the RPC of the United Kingdom in its impact assessment of the MLC, indications from United Kingdom's passenger cruise ship industry are that companies would order ships of the same size and take additional space needed for crew accommodation from existing passenger space. The main reason for choosing this approach would be restrictions on the ports as passenger ships are mainly constrained by the ports they visit in terms of draught and beam when entering the harbour and air draft when passing under certain bridges. This is also because an increase in height has significant stability implications for the vessel. In addition, the passenger facilities that are available on board cruise ships are considered to be an essential part of the service, suggesting that passenger accommodation space in terms of the number of cabins would likely reduce (RPC, 2014).

3.5 Design of other types of ships 3,000 GT and above

The findings received by RPC from industry sources have shown that the impact of MLC Regulation 3.1 on container, bulk carriers and tankers is assumed to be insignificant. These classes of ship generally have a small enough crew and sufficient flexible space that the additional accommodation space could be included without increasing the overall size of the ship (RPC, 2014).

4. Possible solutions for new ship design

4.1 Applying for exemptions with flag states

According to ILO, it is possible for the ratifying flag states to grant exemptions but to a limited extent and only where they are expressly permitted by the MLC (ILO, 2006). An example is MLC Standard A3.1.9(a) which states the following:

[...] in ships other than passenger ships, an individual sleeping room shall be provided for each seafarer; in the case of ships of less than 3,000 gross tonnage or special purpose ships, exemptions from this requirement may be granted by the competent authority after consultation with the ship owners' and seafarers' organizations concerned.

To explore the option of applying for exemption as a possible solution, the maritime regulations of three flag states related to MLC Regulation 3.1 were examined. According to the 2012 United Nations Conference on Trade and Development (UNCTAD) Review of Maritime Transport Publication, the World's top three flags of registration with the largest registered deadweight tonnage are Panama, Liberia and Marshall Islands, respectively with a combined 41.78 per cent share of the World's total deadweight tonnage (UNCTAD, 2012). These three flag states are also among the first 30 Member States that had ratified the MLC and are considered open registries, i.e. they have no restriction on the nationality of the ship owners registering ships with their flags.

4.1.1 Panama. Under Article 154 of the Executive Decree No. 86 issued by the Ministry of the Presidency of the Republic of Panama (PMA, 2013), the competent authority shall authorise exemptions from the requirements contained in Title Fourth of the decree, which is related to accommodation, and only with regards to special circumstances as long as each of the following conditions is fulfilled:

- The exemption is expressly authorised by this Executive Decree.
- The exemption is reasonable, taking into account the size of the ship and the number of persons aboard.
- The exemption can clearly be justified and supported by valid reasons.

- The exemption is granted subject to the safety and health of seafarers being protected.

The exemptions that are expressly authorised by decree are similar to the ones that are expressly permitted by the MLC, such as the MLC Standard A3.1.9(a) mentioned earlier.

4.1.2 Liberia. According to the Marine Notice MLC-004 issued by the Liberia Maritime Authority (LMA, 2013), any exemptions permitted by the administration for the requirements of accommodation and recreational facilities stated in the marine notice shall only be granted by the administration for particular circumstances in which such exemptions can clearly be justified on substantial grounds and subject to protecting the seafarers' health and safety. As the requirements and exemptions of accommodation and recreational facilities in the above marine notice are similar to those stated in MLC Regulation 3.1, there is no indication of whether other exemptions may be allowed. It could perhaps be answered when a ship owner has submitted an application with the flag administration.

4.1.3 Marshall Islands. According to the Marine Notice No. 7-044-1 issued by the Office of the Maritime Administrator of the Republic of Marshall Islands (RMI, 2014), for ships of less than 3,000 gross tons, where it is reasonable to do so, in relation to the requirements of the provisions specified below and considering the size of the ship and the number of persons on board, ship owners may seek exemption under MLC 2006 Title 3 from the Administrator from compliance with:

- MLC Standards A3.1.9(f), (h), (i), (j), (k) and (l) with respect to floor area only; and
- MLC Standards A3.1.9(m) and (n)

The equivalent arrangements for ships noted above may also be considered. Any exemptions with respect to the requirements of the minimum standards in the marine notice may be made only where they are expressly permitted in the minimum standards and only for particular circumstances in which such exemptions can clearly be justified on strong grounds and subject to protecting the seafarers' health and safety.

In comparison with the other two flags, it may seem that the Marshall Islands flag administration is more inclined to allow exemptions. However, the question of what exactly can be exempted or perhaps be reduced in floor areas, for example, would be best answered by communicating with the flag administrations. Besides the above three flags, there are other open registries, which a ship owner can also consider and which may interpret the MLC requirements and exemptions differently. Another option for a ship owner to consider is to apply for substantial equivalents with the flag state.

4.2 Applying for substantial equivalents with the flag states

Under Paragraph 3 of MLC Article VI, a "Member which is not in a position to implement the rights and principles in the manner set out in Part A of the Code may [...] implement Part A through provisions in its laws and regulations or other measures which are substantially equivalent to the provisions of Part A".

This is reinforced under Paragraph 4 of the same MLC article, which states that "for the sole purpose of Paragraph 3 of this Article, any law, regulation, collective agreement or other implementing measure shall be considered to be substantially equivalent, in the context of this Convention, if the Member satisfies itself that:

- it is conducive to the full achievement of the general object and purpose of the provision or provisions of Part A of the Code concerned; and
- it gives effect to the provision or provisions of Part A of the Code concerned (ILO, 2006).

The answer to what can be considered a substantially equivalent provision can be found in the ILO's Frequently Asked Questions (FAQ) on MLC. An example is a question on "could less space be provided in sleeping accommodation in return for greater comfort?" One of the solid equivalent solutions suggested consists of extra space such as a big, more comfortable day room to be shared by adjoining sleeping rooms. Another proposed solution was the provision of ensuite sanitary facilities (ILO, 2012).

A real example of a substantially equivalent provision given by a flag state, which is publicly made known is found in the Marine Guidance Note (MGN) 517 (M) published by the Marine and Coastguard Agency (MCA) of the United Kingdom (MCA, 2014). This is for the substantially equivalent accommodation standards for large commercial yachts of 3,000 GT to less than 5,000 GT. After the publication of Large Commercial Yacht Code (LY3), which included provisions for MLC and permitted yachts of 3,000 GT and over to be built under the code for the first time, designers and builders raised concerns with the MCA that strict compliance with the LY3 standards may not create the best sleeping accommodation standards for seafarers on yachts of that size. The UK Government then consulted with its social partners on substantially equivalent accommodation standards for yachts of 3,000 GT to less than 5,000 GT and following the consultation, agreed to accept the alternative arrangements allowing two seafarers not performing the duties of officers to be accommodated in a twin cabin arrangement on the condition that the minimum floor area for such a cabin to be no less than 11 m². Prior to this substantial equivalent provision, under MLC Standard A3.1.9(h), sleeping rooms in ships of only less than 3,000 GT, other than passenger ships and special purpose ships, may be occupied by a maximum of two seafarers.

4.3 Registering the vessel with a non-ratifying flag state

Although this option may seem an unethical choice as it may appear to be avoiding compliance, it could be considered as a last resort. It is on assumption that the ship designer has not designed the ship to comply fully with MLC Regulation 3.1. Such a scenario could be more likely to happen to designers and builders of smaller vessels (below 500 GT) and at the time of designing or building the ship, they may not be aware of the requirements of MLC. Those vessels are operating in a country which has yet to ratify MLC, even though MLC has already been in force since 20 August 2013. There are still a considerable number of flag states that have not ratified MLC, even though some of them may be in the process of doing so. However, it can also be assumed that some of these flag states may also not be ratifying the MLC anytime soon as the ratification process for them will take a long time owing to various factors.

Non-ratifying flag states may advise the owners of the ships registered under their flags to comply voluntarily with MLC, but they will not be able to legally enforce the compliance as they have not acceded to MLC and adopt it into their legislation. A ship owner that registers a "new ship" with a non-ratifying flag state will run the risk of the vessel being inspected and detained at a port of a ratifying country if the ship is non-compliant because of the "no more favourable treatment clause" in Article V of MLC that seeks to ensure a level playing field for ships registered with flag states that have ratified MLC compared to those ships registered with flag states that haven't ratified. Hence, this option should only be

considered for a new ship if it is only going to trade to ports of non-ratifying countries. However, this list of countries would also become smaller as more countries ratify MLC.

5. Conclusions and recommendations

Based on the study carried out in this article, the following can be concluded:

- There seems to be more flexibility in the form of non-mandatory guidelines and substantial equivalence for flag states under MLC compared to ILO No. 92 and No. 133, and such flexibility is also more specific.
- Some of the mandatory requirements of ILO No. 92 and No. 133 are found under the non-mandatory guidelines of MLC, thus allowing flag states that did not ratify these two pre-MLC conventions the flexibility of adopting or not adopting them under their legislation.
- Under MLC, only SPS is allowed to accommodate four persons in one room. It would have an adverse impact on offshore support vessels that are below 3,000 GT and not classed as SPS, as a similar type of vessels built pre-MLC and not classed as SPS could accommodate four seafarers in one room.
- The requirement for increased height and floor spaces under MLC would be more likely to result in increased principal dimensions (length, breadth and depth) rather than a reduction in commercial capacity, thereby resulting in increased GT for post-MLC built vessels compared to similar type of pre-MLC built vessels.
- Impact due to post-MLC accommodation spaces requirements on the design of smaller vessels below 500 GT would be more unfavourable compared to bigger vessels of less than 3,000 GT. It is because of the limitations of space available on smaller vessels of less than 500 GT and also the similar floor area requirements for ships of less than 3,000 GT.
- Possible solutions for new ship design to meet post-MLC accommodation spaces requirements include applying for exemptions and substantial equivalents with flag states or registering with a non-ratifying flag state.

References

- Hetherington, C., Flin, R. and Mearns, K. (2006), "Safety in shipping: the human element", *Journal of Safety Research*, Vol. 37 No. 4, pp. 401-411.
- ILO (1949), *Accommodation of Crews Convention (Revised), 1949 (No. 92)*, available at: www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:55:0::55:P55_TYPE,P55_LANG,P55_DOCUMENT,P55_NODE:CON,en,C092,/Document (accessed 4 November 2014).
- ILO (1970), *Accommodation of Crews (Supplementary Provisions) Convention, 1970 (No. 133)*, available at: www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_INSTRUMENT_ID:312278:NO (accessed 9 November 2014).
- ILO (2006), *International Labour Conference 94th Session, International Labour Office, Geneva*, available at: www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:92:0
- ILO (2012), *Maritime Labour Convention, 2006: Frequently Asked Questions*, revised ed., available at: www.ilo.org/wcmsp5/groups/public/—ed.. /wcms_177371.pdf (accessed 31 October 2014).
- IMO (1969), *International Convention on Tonnage Measurement of Ships, 1969 ed.*, International Maritime Organization, London.

- IMO (2008), *Res. MSC.266(84) Code of Safety for Special Purpose Ships*, available at: www.imo.org/blast/blastDataHelper.asp?data_id=22047 (accessed 20 November 2014).
- LMA (2013), *Marine Notice MLC-004 Rev. 12/13*, available at: www.lisr.com/lisr/Portals/0/MLC-004.pdf (accessed 2 November 2014).
- LMA (2014), *Marine Notice MLC-001 Rev. 01/14*, available at: www.lisr.com/lisr/portals/0/MLC-001.pdf (accessed 2 November 2014).
- MCA (2013), *Marine Guidance Note MGN 471*, available at: www.gov.uk/government/uploads/system/uploads/attachment_data/file/282100/mgn471.pdf (accessed 2 November 2014).
- PMA (2012), *Merchant Marine Circular MMC-251*, available at: www.segumar.com/wp-content/uploads/2013/03/MMC-251_March20131.pdf (accessed 2 November 2014).
- PMA (2013), *Executive Decree No. 86 Issued by the Ministry of the Presidency of the Republic of Panama*, available at: www.segumar.com/wp-content/uploads/2013/03/Executive-Decree-No.-86-of-February-2013.pdf (accessed 2 November 2014).
- RMI (2014), *Marine Notice No. 7-044-1*, available at: www.register-iri.com/forms/upload/MN-7-044-1.pdf (accessed 2 November 2014).
- RPC (2014), *Impact Assessment of Merchant Shipping (Maritime Labour Convention) (Crew Accommodation) Regulations 2013*, available at: www.legislation.gov.uk/ukia/2014/224/pdfs/ukia_20140224_en.pdf (accessed 2 November 2014).
- UNCTAD (2012), *United Nations Conference on Trade and Development (UNCTAD) Review of Maritime Transport Publication*, available at: http://unctad.org/en/publicationslibrary/rmt2012_en.pdf (accessed 25 December 2014).

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