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# International regulations on labour health and safety applied to fishing and maritime transport sectors.

## Are maritime workers under-protected?

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Julio Louro Rodríguez<sup>1</sup>, Rosa Mary de la Campa Portela<sup>1</sup>, Guadalupe Martín Pardo<sup>2</sup>

<sup>1</sup>Universidade da Coruña

<sup>2</sup>Marine Technology Centre (CETMAR), Spain

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*The work activity developed on board is of great importance in our nearby environment, and it has a series of peculiarities that determine the service rendering of sea workers. On the other hand, work at sea is developed on an international basis. Nowadays such work becomes a completely globalised industrial sector in relation to the elements that make up the ship's operation, including manpower. For that reason several relevant international organisations have paid attention to this industrial sector and have adopted a broad regulation on this matter. In the case of the European Union, the Community procedure emphasises enormous interest in providing specific and comprehensive training to seafarers, as well as in regulating working time on board with the aim of minimising the safety problems caused by fatigue. In the present article a schematic presentation of regulations on workers' health and occupational safety protection derived from the European Union, the International Maritime Organisation, and the International Labour Organisation has been done. Also it shows what parts of these regulations are not applicable to the work on board, and it reveals how the workers of fishing and maritime transport sectors are under-protected with regard to the guarantee of their health and occupational safety compared to workers in other sectors.*

**Key words: international regulations, safety and protection in maritime transport**

### INTRODUCTION

The work activity developed on board is of great importance in our nearby environment, and it has a series of peculiarities that determine the service rendering of sea workers. These peculiarities demand that the involved public authorities pay attention to both occupational hazards and health and safety on board.

On the other hand, work at sea is developed on an international basis. Nowadays such work has become a completely globalised industrial sector in relation to the elements that make up the ship's operation, including manpower. For that reason several relevant international organisations have paid attention to this industrial sector and have adopted

a broad regulation on this matter, adopting numerous Agreements and Recommendations applicable to sea workers, or approving a broad number of resolutions and directives that take steps towards the protection of their health and safety.

Moreover, in recent times a massive approval of normative has taken place that tries to minimise the terrible consequences of maritime accidents on maritime activity and on the economic activities that depend on it. On behalf of this strategy, headed by international organisations and particularly by the European Union (EU), a good number of regulations on sea workers' occupational health and safety are being adopted.

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In effect, the maritime safety policy of the EU, which goes beyond the limits of the marine environment to spread to other fields of the future integrated maritime community policy (fight against piracy, control of persons' traffic, rights of sea workers, etc.), has turned into a new public community function with his own governing organisms. The community rules, which have their origin in the international regulations on maritime safety, emphasise the enormous interest to provide a specific and integral education and training to seafarers, as well as for regulating maritime working hours with the aim of minimising the safety problems raised by fatigue.

However, taking into account the difference between working practices in maritime-related sectors such as fishing and maritime transport, it seems necessary to know if these new regulations and legal instruments on occupational health and safety cope with the whole spectrum of activities developed on board different types of ships and related to varied economic interests.

## MATERIALS AND METHODS

In the present article we will schematically present the regulations from the European Union, the International Maritime Organisation, and the International Labour Organisation related to occupational health and safety. We will try to clarify what parts of these regulations are not applicable to work on board, so leading fishing and maritime transport workers to a situation of disadvantage compared to workers of other sectors. We will pay particular attention to the regulations related to working day, working place conditions such as noise and vibrations, and occupational diseases.

It is necessary to indicate that the exposed regulations are the updated ones. Later amendments to this regulations have been deliberately omitted.

## RESULTS

### EUROPEAN UNION REGULATIONS ON OCCUPATIONAL HEALTH AND SAFETY

It includes Directive 89/391/EEC and 19 individual directives within the meaning of Article 16 (1) of Directive 89/391/EEC detailed next:

- Directive 89/391/EEC on the introduction of measures to encourage improvements in the health and safety of workers at work [1]. Article 2. Scope 1. This Directive shall apply to all sectors of activity, both public and private (industrial, agri-

cultural, commercial, administrative, service, educational, cultural, leisure, etc.).

- Directive 89/654/EEC concerning the minimum health and safety requirements for the workplace [2]. Article. Subject 2. This Directive shall not apply to: (a) means of transport used outside the undertaking and/or the establishment, or workplaces inside means of transport; [...] (d) fishing boats [...].
- Directive 2009/104/EC concerning the minimum health and safety requirements for the use of work equipment by workers at work [3].
- Directive 89/656/EEC on the minimum health and safety requirements for the use by workers of personal protective equipment in the workplace [4].
- Directive 90/269/EEC on the minimum health and safety requirements for the manual handling of loads where there is a risk particularly of back injury to workers [5].
- Directive 90/270/EEC on the minimum health and safety requirements for work with display screen equipment [6]. Article 1. Subject 3. This Directive shall not apply to: [...] (b) computer systems on board a means of transport [...].
- Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work [7].
- Directive 2000/54/EC on the protection of workers from risks related to exposure to biological agents at work [8].
- Directive 92/57/EEC on the implementation of minimum health and safety requirements at temporary or mobile construction sites [9].
- Directive 92/58/EEC on the minimum requirements for the provision of safety and/or health signs at work [10]. Article 1. Object [...] 3. This Directive shall not apply to signs used for regulating road, rail, inland waterway, sea, or air transport [...].
- Directive 92/85/EEC on the introduction of measures to encourage improvements in the health and safety at work of pregnant workers and workers who have recently given birth or are breastfeeding [11].
- Directive 92/91/EEC concerning the minimum requirements for improving the health and safety protection of workers in the mineral-extracting industries through drilling [12].
- Directive 92/104/EEC on the minimum requirements for improving the health and safety protection of workers in surface and underground mineral-extracting industries [13].

- Directive 93/103/EC concerning the minimum health and safety requirements for work on board fishing vessels [14]. [...] Article 2. Definitions: [...] (b) new fishing vessel: a fishing vessel with a length between perpendiculars of 15 metres or over and for which, on or after the date specified in the first subparagraph of Article 13 (1) [...] (c) existing fishing vessel: any fishing vessel with a length between perpendiculars of 18 metres or over and which is not a new fishing vessel [...].
- Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work [15]. [...] Article 1. Objective and scope 5. As far as the transport of hazardous chemical agents is concerned, the provisions of this Directive shall apply without prejudice to more stringent and/or specific provisions contained in Directive 94/55/EC, in Directive 96/49/EC, in the provisions of the IMDG Code, IBC Code, and IGC Code as defined in Article 2 of Directive 93/75/EEC [...].
- Directive 1999/92/EC on minimum requirements for improving the health and safety protection of workers potentially at risk from explosive atmospheres [16]. [...] Article 1. Object and scope 2. This Directive shall not apply to: [...] (e) the use of means of transport by land, water and air, to which the pertinent provisions of the international agreements (e.g. ADN, ADR, ICAO, IMO, RID) and the Community Directives giving effect to those agreements, apply. Means of transport intended for use in a potentially explosive atmosphere shall not be excluded [...].
- Directive 2002/44/EC on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (vibration) [17]. [...] (8) In the case of sea and air transport, given the current state of the art it is not possible to comply in all circumstances with the exposure limit values for whole-body vibration; provision should therefore be made for duly justified exemptions in some cases. [...] Article 10. Derogations 1. In compliance with the general principles of health and safety protection for workers, Member States may, in the case of sea and air transport, derogate from Article 5 (3) in duly justified circumstances with respect to whole-body vibration where, given the state of the art and the specific characteristics of workplaces, it is not possible to comply with the exposure limit value despite the technical and/or organisation measures taken. [...] 3. The deroga-

tions referred to in paragraphs 1 and 2 shall be granted by Member States after consultation of the two sides of industry in accordance with national laws and practice. Such derogations must be accompanied by conditions which guarantee, taking into account the special circumstances, that the resulting risks are reduced to a minimum and that the workers concerned are subject to increased health surveillance. Such derogations shall be reviewed every four years and withdrawn as soon as the justifying circumstances no longer exist.

- Directive 2003/10/EC on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (noise) [18]. [...] (11) The Code on noise levels on board ships of the IMO Res. A 468 (12) provides guidance for achieving reduction of noise at source on board ships. Member States should be entitled to provide a transitional period with regard to the personnel on board seagoing vessels. [...] Article 17. Transposition 2. In order to take account of particular conditions, Member States may, if necessary, have an additional period of five years from 15 February 2006, that is to say a total of eight years, to implement the provisions of Article 7 with regard to the personnel on board seagoing vessels.
- Directive 2004/40/EC on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields) [19].
- Directive 2006/25/EC on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artificial optical radiation) [20].

#### **OTHER EUROPEAN UNION REGULATIONS RELATED TO OCCUPATIONAL HEALTH AND SAFETY**

- Directive 97/70/EC setting up a harmonised safety regime for fishing vessels of 24 metres in length and over [21].
- Directive 2006/15/EC establishing a second list of indicative occupational exposure limit values in implementation of Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC [22].
- Commission Regulation (EU) No 428/2010 implementing Article 14 of Directive 2009/16/EC as regards expanded inspections of ships [23].
- Commission Recommendation of 19 September 2003 concerning the European schedule of occupational diseases [24].

- Directive 1999/63/EC concerning the Agreement on the organisation of working time of seafarers concluded by the European Community Shipowners' Association (ECSA) and the Federation of Transport Workers' Unions in the European Union (FST) – Annex: European Agreement on the organisation of working time of seafarers [25].
- Directive 94/33/EC on the protection of young people at work [26]. [...] Article 9. Night work: 2. (b) [...] However, Member States may, by legislative or regulatory provision, authorise work by adolescents during the period in which night work is prohibited in the following cases, where there are objective grounds for so doing and provided that adolescents are allowed suitable compensatory rest time and that the objectives set out in Article 1 are not called into question: work performed in the shipping or fisheries sectors [...].
- Directive 92/29/EEC on the minimum health and safety requirements for improved medical treatment on board vessels [27].
- Directive 91/383/EEC supplementing the measures to encourage improvements in the health and safety at work of workers with a fixed-duration employment relationship or a temporary employment relationship [28].
- Directive 96/98/EC of on marine equipment [29].

#### **INTERNATIONAL MARITIME ORGANISATION REGULATIONS ON OCCUPATIONAL HEALTH AND SAFETY OF SEA WORKERS**

- International Convention for the Safety of Life at Sea (SOLAS) [30]
- IMO Res.A 468(XII) Code on noise levels on board ships [31]
- The Torremolinos International Convention for the Safety of Fishing Vessels [32]
- The Torremolinos Protocol [33]
- The International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers (STCW) [34]
- International Convention on Standards of Training, Certification, and Watchkeeping for Fishing Vessel Personnel (STCW-F/95) [35]

#### **INTERNATIONAL LABOUR ORGANISATION REGULATIONS ON OCCUPATIONAL HEALTH AND SAFETY OF SEA WORKERS**

- ILO Maritime Labour Convention, 2006 [36]
- ILO C188 Work in Fishing Convention, 2007 [37]
- R199 – Work in Fishing Recommendation, 2007 [38]

#### **FAO, ILO, OMI, AND HWO JOINT ACTIONS ON OCCUPATIONAL HEALTH AND SAFETY OF SEA WORKERS**

- The FAO/ILO/IMO Code of Safety for Fishermen and Fishing Vessels, 2005 [39]
- FAO/ILO/IMO Voluntary Guidelines for the Design, Construction, and Equipment of Small Fishing Vessels, 2005 [40]
- FAO/ILO/IMO Safety recommendations for decked fishing vessels of less than 12 metres in length and undecked fishing vessels, 2010 [41]

#### **DISCUSSION**

As for the European specific regulations on occupational health and safety protection we highlight:

- Directive 93/103/EC [14] is only applicable to sea workers, specifically to fishing sector workers;
- Two directives are only applicable to the mineral-extracting industries [12, 13];
- 10 directives are applicable without restrictions to sea workers and;
- 7 directives exclude sea workers of their scope or establish special restrictions for the workers of this sector.

Nevertheless, as de la Campa, Louro, and Bouza [42] state, if we bear in mind that vessels, which besides being places of work are spaces for daily life, have clear ergonomic limitations, special conditions of habitability, as well as environmental irregular conditions (noise, vibrations, temperature, humidity, etc.), it is well grounded to suppose that the application of certain directives to shore workers implies less difficulties than their application to sea workers. In the same way, due to the duration of navigation campaigns and the impossibility of vessels to enter a port depending on the needs of seafarers, it would be necessary to do an in depth study on the dispositions of these regulations in order to verify if they are really applicable to the maritime sector given the special conditions of the workplace, or if it would be necessary to develop special dispositions to guarantee the same legal protection for this sector. This could be the case of Directive 92/85/EEC [11] on the introduction of measures to encourage improvements in the health and safety at work of pregnant workers and workers who have recently given birth or are breastfeeding, which does not consider a worker's condition of pregnancy to be incompatible with work at sea.

Also, sea workers remain unprotected in relation to the exposure to risks derived from physical

agents (noises and vibrations), exposure to risks derived from explosive atmospheres, health and safety signs at work, work with equipment including display units, and the minimal dispositions of health and safety in the workplaces. Other transport sectors such as land and air transport have, generally speaking, the same restrictions in the application of these directives. It is necessary at this point to emphasise the exclusions and restrictions related to:

- Workplaces: Maritime Transport continues to lack a reference regulation on work places. Matters such as working spaces, ladders, stairs, maintenance, health and safety signs at work, environmental conditions, lighting, etc. are not yet regulated. In addition, it implies a lack of reference to shipbuilding and an opened door for the importation of “low cost” ships.
- Display units: 22 years after the enforcement of the reference Directive [6] it is still not taken into account that all ship officers spend most of their working day in front display screen equipment.
- Health and safety signs at work: these signs are designed to be used in the workplace, but in Maritime Transport there is no regulation on workplaces.
- Health and safety on fishing vessels: fishing vessels less than 15 m in length remain out of the scope of this Directive [14]. It is necessary to emphasise that the ambiguous wording used in this Directive complicates its understanding and application.
- Vibrations: Exceptions are not clear. On the one hand the technical inability to observe the exposition limit values is admitted, but on the other hand the reduction of derived risks to a minimum is required. Also, the responsibility of its justification is put on the shipowner. Moreover, affected workers should be provided with a high control over their health.
- Noise: The eight-year transitional period has finished and the directive specifications are not being applied to the maritime sector. The new limits are not taken into account in shipbuilding, and IMO recommendations are not applied [42].

Noise continues to be one of the main problems of occupational health on board merchant vessels despite the European Community Green Paper on Future Noise Policy, which establishes that: “no person should be exposed to noise levels which endanger health and quality of life” [43]. But noise is not only a matter of health; in the case of Maritime Trans-

port it is also a safety matter, as the IMO recognises when it notes that “noise impedes concentration and communication, can cancel other noises related to safety, such as alarms, and prevents suitable rest, thus favouring the appearance of fatigue” [31, 44].

Likewise, the harmful effect of noise is strengthened when it appears associated with other common elements of the maritime workplace: a high degree of dampness and vibrations. Also, rest periods on board are not long enough to make ear recovery capacity easier because seafarers do not leave the workplace once their working day is finished.

Besides the EU specific regulations on occupational health and safety there are another nine EU Directives related to the above-mentioned areas. Four of these Directives are applicable only to the maritime sector. These are related to the arrangement of working hours, medical assistance on board, marine equipment, and safety in fishing vessels of 24-m length and over. Also, it is necessary to pay attention to EU Regulations on extended inspections of vessels [23], which, although it is not a directive, is an instrument to control the regulations related to workplace conditions and to assess certain on-board living and working conditions. This regulation does not include the fishing sector.

In relation to these regulations, it is interesting to emphasise the following points:

- Occupational diseases: With regard to hypoacusis or deafness caused by noise and for the associate activities, this Recommendation says: “The diseases mentioned in this schedule must be linked directly to the occupation” [24]. We understand that the problem of deafness caused by noise on ships concerns the whole crew. Although the personnel of the engine room are exposed to high levels of noise during their working day, they are not necessarily the crew members that receive most decibels throughout the day [44]. Noise is also a constant feature during rest hours, affecting the entire crew. This circumstance does not allow ear recovery, and it also affects sleeping time, facilitating the appearance of chronic fatigue.
- Working day: The relation between the working day and fatigue is a very well-known and wide topic. In summary: ILO Convention 180 concerning Seafarers’ Hours of Work and the Manning of Ships [45], establishes a working day of 8 hours, with one day off per week and official holidays (art. 4). On the other hand, Directive 1999/63/CE [25] strays off the ILO Convention 180 basis,

allowing dispensations on maximum working hours established by ILO: 42 daily and 72 weekly working hours.

- Medical assistance on board: Taking into account 20 years of advances in communications, the huge implementation of new information and communication technology and improved support formats, the paper version of the IMO On-Board International Medical Guide is becoming obsolete. Perfectly feasible ideas that take into account this technological progress, such as the “virtual doctor”, would allow more accurate and rapid on-board medical assistance [46].

In relation to the IMO regulations on occupational health and safety, we highlight the SOLAS Convention [30], which, in general, is applied to all the merchant vessels more than 500 GT engaged in international voyages. The main objective of the SOLAS Convention is to specify minimum standards for the construction, equipment, and operation of ships, compatible with their safety. Only Chapter V, which relates to safety of navigation, is applied to fishing vessels.

Also, the IMO makes recommendations on the levels of noise on board [31]. Although it is an already old-fashioned text regarding the established levels, the methods suggested to reduce the exposure to noise are still in force.

With regard to fishing sector legal instruments, the Torremolinos Convention [32] contained safety requirements for the construction and equipment of new, decked, seagoing fishing vessels of 24 m in length and over. Existing vessels were covered only in respect of radio requirements.

In the 1980s, due to a lack of ratifications, it became clear that the Torremolinos Convention was unlikely to enter into force, largely for technical reasons, and the IMO decided to prepare a replacement in the form of a protocol.

The Torremolinos Protocol [33] applies also to fishing vessels of 24 m in length and over. To enter into force, the Protocol needs the ratification of 15 states with at least an aggregate fleet of 14,000 vessels of 24 m in length and over. However, as of January 2011, it has been ratified by 17 States, with an aggregate fishing vessel fleet of approximately 3,000 vessels of 24 m in length and over.

It is necessary to stress in this point the difficulties experienced in the implementation of IMO legislation on a worldwide basis. These difficulties delay and even disable the full enforcement of regulations that are of vital importance to guarantee the health and safety of maritime sector workers [47].

On the part of the ILO, the Maritime Labour Convention 2006 [36] combines and updates numerous Labour Conventions on the Maritime Transport. To come into force, the MLC has to be ratified by at least 30 member states with a total share in the world gross tonnage of ships of 33%. Although the percentage of world gross tonnage of ships is 56%, only 26 member States have ratified the convention at this moment.

The situation of ILO C188 Work in Fishing Convention 2007 [37] is more delicate since it has only two ratifications at present.

The ILO Work in Fishing Recommendation is applicable to all fishing ships [38]. It has additional dispositions on noise and vibration, accommodation, heating, lighting, and risk evaluations, among others, but it is not a compulsory regulation.

With relation to the joint actions of the FAO, ILO, and IMO the Code of Safety for Fishermen and Fishing Vessels 2005 [39] is only applicable to fishing vessels of 24 m in length and over, which again leaves workers of smaller fishing vessels in a situation of vulnerability.

On the other hand, and admitting that only 3% of the EU fishing fleet is more than 24 m in length, the FAO/IMO/ILO working group prepared, based on the contents of safety codes, voluntary Guidelines for the Design, Construction, and Equipment of Small Fishing Vessels of length between 12 m and 24 m [40]. This working group also prepared safety recommendations for decked fishing vessels of less than 12 m in length and undecked fishing vessels [41].

We agree with Perez-Labajos [48] and Windle et al. [49], who state that the improvement in health and safety in the field of fishing activities has been a major concern of numerous institutions and that regulatory regimes governing these issues are becoming increasingly complex, but in spite of the efforts of international institutions and organisations in the last decade to raise occupational health and safety standards in the fishing sector, a huge legal gap, mainly relating to fishing vessels less than 12 m in length, is still present.

It is necessary to stress that 77% of the fishing fleet is less than 10 m in length, so occupational health and safety regulations applicable to this fleet are scarce.

Also, fishing work and safety is indirectly affected by other regulatory regimes such as those related with fisheries management, fishing location, insurance, fishing economics, and target species. Moreover, the lack of a consolidated safety culture on the part of fishing workers helps to limit the effectiveness of regulatory instruments [49].

## CONCLUSIONS

The United Nations Convention on the Law of the Sea of 10 December 1982 [50] states: [...] Article 94. Duties of the flag State [...] 3. Every State shall take such measures for ships flying its flag as are necessary to ensure safety at sea with regard, inter alia, to: [...] (b) the manning of ships, labour conditions and the training of crews, taking into account the applicable international instruments [...].

Therefore, the safety of navigation and the health and safety of workers derived from the working conditions on board must be guaranteed by every state on an individual basis.

In relation to safety of navigation in the Maritime Transport sector, the UNO, through the IMO and the ILO, has managed to establish an international and high-standard normative heritage that needs the compromise of member states to enter into force. In the EU member states it is necessary to improve with regard to occupational health and safety regulations. The EU should make a great effort to improve regulations on workplaces, display unit screens, noise, vibrations, occupational diseases, and the working day. Also, maritime activities should be considered as dangerous activities to give the maritime sector the same legal status as construction, the iron and steel industry, shipbuilding, etc.

As for fishing sector legislation, it represents a fragmentary and slightly specific set of procedures and recommendations, not uniformly regulated and hard to follow-up and check. With regard to safety of navigation, the establishment of minimum requirements for vessels of 24 m in length and over is still on course. Fishing vessels between 24 m and 15 m in length have poor and imprecise regulation. Regulation below 15 m in length, is scarcely developed. Nevertheless, it is necessary to remember that only 3% of the EU fishing fleet is more than 24 m in length and 77% of the EU fishing fleet is less than 10 m in length.

As regards the level of occupational health and safety protection, the fishing sector does not differ so much from the maritime transport sector. Although they have different casuistries, protection standards on noise, vibrations, occupational diseases, working hours, working places, etc. have not reached the levels of those for on-shore workers.

It is clear that seafarers have at their disposal less human, material, and technological resources for occupational risk prevention than on-shore workers do. The protection to face up to occupational diseases, the response capacity in the event of an accident, and the possibility to receive external help to minimise the consequences of such an accident are

difficult issues to cope with on board. The sea worker is at a disadvantage with relation to his/her capacity and opportunity to face this kind of situation, to anticipate the risks derived from his/her work activity, to respond in emergency situations, and to deal with the consequences of an accident at work.

The hostile nature of the workplace, which is also the leisure and rest place, gives the work on board an extremely delicate nature in relation to the workers health and safety protection. So various competent international organisations have the responsibility to legislate in these matters, stressing the particular characteristics of on-board work. Nevertheless, this necessary and fair legal overprotection that saves the “distance of opportunity” of occupational health and safety prevention and protection between different working places, such as vessels and shore companies, is not noticed in the existing international legal instruments.

It is therefore necessary to draw the attention of competent authorities to these matters to make sure that, by means of the establishment of the necessary legal measures, an additional “window of opportunity” is opened to guarantee the right protection of maritime sector workers and to give this sector the well-deserved dignity that work and life on board have gained both for historical tradition and for their importance in the world economy.

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