The maritime law as environmental protection: the management in study case of sustainable operations to control emissions in maritime transport in ECA`s area.

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Abstract
The article has explored in the perspective of law, which logistic circumstances can be hold the management of sustainable operations within environmental regulations to better control for air emissions in maritime transport loads. The strict liability of the purchaser is verified about environmental consequences for fuel technology buying decisions.

Keywords: Emissions Transport. Management. Maritime Law.

INTRODUCTION

The United Nations Convention on the Law of the Sea (UNCLOS), held in Montego Bay, coexists with a series of international conventions of universal and regional scope, which regulates related services to maritime activity, based on supplying ships for systems multimodal transportation fuels at sea.

According to Martins (2008) UNCLOS is the convention that consolidates historically important provisions and concepts that were created and targeted to the marine environment protection, by the signatory states until then in the fight against pollution of the marine environment.

These signatory states still corroborate almost entirely with measures aimed at increasing environmental protection, especially those related to environmental control of atmospheric emissions from the shipping emissions.

In the Fifties, the first attempts to combat the pollution of the sea, especially the International Convention for the Prevention of Pollution of the Sea by Oil in London May 12, 1954 (Martins, 2008).

Historically, the emergence of international law Environmental fits in legal phenomenology dated since the 60's, to regulate relations among States in the field of environmental protection.

The maritime industry point of view, due to the evolution of these historical perspectives, the supply industry search filter and cut off the bunker tampering practices, i.e. suppliers who commit adultery information on fuel quality, as well as to data assess the appropriate fuel technology, while refueling.
Thus, there are models of negative sanctions on violators, applied in territorial waters, where the performance conditions are poor and maritime surveillance, however, the imposition of penalties remains. But these actions are insufficient and limited to systemic control of the maritime authority.

Usually the tampered fuel is the main irregularity of the owners who suffer from inadequate purchase of acceptable products as the type of vessel. However, in the act distribution or supply to the ship or vessel, the fuel can be tampered in delivery by offshore suppliers where enforcement appears more precarious and limited.

In this circumstance proof suit material is required to apply any kind of mandatory sanction of an environmental management model more collaboratively. Thus, the material proof is in the analysis of the product (fuel) and the competent authorities for environmental protection can more quickly analyze and engage in support with maritime authorities, for their environmental quality control fuel naval, while refueling.

There are several technological resources available for offshore surveillance happen, so this sustainable action should be more frequent maritime transport. This environmental concern is the same as it strengthens the understanding of the legitimacy of the maritime modal eco-efficiency, which in fact it is less harmful to health, which can only be justified by the amount carried by voyage, considering the amount of power consumption and capacity production in transport activity.

However, the effectiveness of energy efficiency also depends on the fuel technology management to support the eco-efficiency status in the management of supply, which require environmental control on board and that this activity is increasingly becoming a part of specialization to shipowners, the ship tonnage must achieve a more skilled labor for such inspection of the supply process, in order to make the best possible quality control of these fuels so that they generate the least harm to human health and to the environment.

**METHODOLOGY**

Yin (2005) highlights the case study as a comprehensive research strategy that can be used for the search process as planning, data collection and analysis. Malhotra (2001) defines as exploratory research that explores a problem or situation to adopt understanding criteria: "...A type of research that aims to provide criteria for the problem situation faced by the researcher and his understanding..." The author believes that it is an empirical research studying a contemporary phenomenon in its context of reality, especially when the phenomenon and context are not clearly defined.

It aims to apply organizational models of public management of sustainable transport to the example of other countries where it is possible to grant benefits or tax rebates to regulate the strict liability of damages for public policies that protect the environmental impact and the emission control of greenhouse gases effect.

**REFERENCIAL THEORETICAL**

**Maritime Management Process by Regulations UNCLOS**
To describe the importance about the services international practice of relating the sea rules now provided from the UNCLOS defines that, States Parties commit themselves to this Convention, watching the events from the United Nations Conference on the Law of the Sea, held in Geneva in 1958 and 1960 have accentuated the need for a new convention on the law of the sea.

The term "environmental best practices" exist systematically by means of a maritime protocol describing the application of the most appropriate combination strategy and environmental control measures. Based on benchmarking of that Protocol (1999) there is an understanding that the best practices are derived from a selection of measures for cases of individual and collective interests, and therefore should consider premised on the following:

(A) The provision of information and education of the public and to users about the environmental consequences of the selection of activities and choice of products, their use and final disposal particular;
(B) The development and application of codes of good environmental practice covering all aspects of activity in the life of the product;
(C) The mandatory application of labels informing users of the environmental risks of a product, its use and ultimate disposal;
(D) The saving resources, including energy;
(E) For collecting the elimination of systems available to the public;
(F) For avoiding the use of hazardous substances or products and the generation of hazardous waste;
(G) For recycling, recovery and reuse;
(H) The application of economic instruments to activities, products or groups of products;
(I) establish a system of licensing for involving a range of restrictions or a ban.

The Protocol in general and individual cases, determining what combination of measures constitutes best environmental practice, in particular, should consider whether there is:

(A) the environmental hazard of the product and its production, use and ultimate disposal;
(B) the substitution by less polluting activities or substances;
(C) the usage level;
(D) the potential benefit or penalty of materials or the environment replacement activities;
(E) advances and changes in scientific knowledge and understanding;
(F) The application deadlines;
(G) social and economic implications.

Reaffirms in this protocol the premises of best environmental practices of supply for ships based on these guidelines, and where it require actions to a particular source of change over time, depending on the technical progress of economic and social factors of the activity can be inherent in any kind of changes are based on scientific knowledge and understanding to fuel technology applied on ships at offshore.

Stands out according to the concern of any pollution on the high seas should be associated with the given context by UNCLLOS, which ranks six specific forms of marine pollution: i) land-based pollution, called pollution teluric (Article 207.); ii) pollution from activities related to seabed under national jurisdiction (Article 208.; 3); iii) pollution from activities on the seabed, on the seabed, and subsoil thereof, beyond the limits of national jurisdiction (these spaces called
the same area Convention, cf. art.1.o., §1.“, item 1) (art.209); iv) pollution from dumping (Article 210); v) pollution from vessels (Art. 211) and vi) pollution from or through the atmosphere it (art. 212 providing standards for forms of pollution of the marine environment (apud OCTAVIANO MARTINS, 2008).

Currently, to create a model of sustainable transport management, it should be done by observing marine pollution classification specified above in items V and VI, which shipowners should promote green strategies to meet in part, which is determined in this Convention on the Law of the Sea.

The international management of the sea

In regarding of the most favorable methodologies involves new technologies to be applied in emergent form for analysis of the collected sample of fuels, aiming to help the great demand control in supplying ships, to minimize emissions of greenhouse gases every step shipping globally. Specifically in the event of inspection equipment of foreign vessels in Brazil, under the aegis of Art. 226, 1, admits to inspection equipment of foreign vessels from port States, however inspections should be limited to examination of the certificates, records and other mandatory documents.

In Brazil, v. art. 5. of Law 9,537 / 97, in verbis: "The foreign vessel subject to naval inspection, to submit irregularities in the documentation or poor operating conditions, representing threat of harm to the environment, the crew, to third parties or to the safety of maritime traffic, can be ordered to: I - not enter the port; II - does not leave the port; III - out of the territorial waters; bear away in National Harbor."

However, according to UNCLOS in the inspection case more incisive material in the vessel's oil, this can only will be undertaken after examination, in case of evidences of irregularities or omissions (Article 226, par. 1).

Octaviano Martins (2008) has described these assumptions are admissible only if: i) there are clear grounds for believing that the condition of the vessel or its equipment does not correspond substantially with the particulars of those documents; ii) The content of such documents are not sufficient to confirm or verify a suspected violation; or iii) the vessel not carry valid certificates and records. Verified the offense, the retention time of the vessel shall be limited to the minimum, unless there is a risk of serious harm to the marine environment, with the flag State to be informed without delay.

According to Octaviano Martins (2008) in such a prism, if the investigation is a violation of applicable laws and regulations or international rules and standards for the protection and preservation of the marine environment, the vessel will be immediately released after serving subject to reasonable procedures such as provision of a bond or other appropriate financial security (art. 226, 1, b).

Compliance’s by Maritime Law

In Brazil, according to Octaviano Martins (2015) it is common to use the Vetting System, for the adoption of evaluation and acceptance of ships adopted by or port terminals and bulk cargo shippers, particularly oil and its derivatives.

For example, the Vetting establishes minimum standards that allow access to shipping terminals observing basic rules of quality, safety and environmental protection.
According to Octaviano Martins (2015), in Brazil, the vessels are examined considering the characteristics and the ship of the state in terms of preservation, or installed resources. So before they begin operation in ports, it is possible to evaluate legally, the facts that lead to technically complete forms to be admitted in the environmental assessment, which criteria determining the energy potential of the vessel, for in terms of assessing their potential eco-efficiency, except save deleterious effect on the admission by type of vessel in Brazilian waters.

However, without prejudice to the international rules and standards relating to seaworthiness of vessels, may be denied the release of a vessel or be subject to the requirement for the vessel to address the closest shipyard to repair whenever the same release represent unjustified threat damage to the marine environment. If the release has been refused or made conditional, the flag State shall be promptly notified, and may seek release of the vessel (art. 226, 1, c).

According to the preceding analysis is necessary to reiterate that, in the event of discharges made in inland waters, in territorial waters or exclusive economic zone of another State, the port State where foreign vessel may open investigations and bring procedural requirements only if led to discharges or can lead to contamination of their own waters or other State which has been or may suffer damage from these discharges or the flag State so requests (Article 218 al. 1 and 2). The State port shall endeavor to satisfy the issued survey requests by any other State whose waters have been polluted by the ship is in its port and also the survey requests occasionally presented by the flag State of the vessel (Article 218. 6, al. 3).

In addition, the State port may prohibit foreign ships which have violated international rules and standards with regard to seaworthiness of vessels and can therefore cause damage to the marine environment, to harness until they have been eliminated the causes of the offense (art. 219) 184.

It is noteworthy that, whatever the circumstances, to exercise their rights and performing their duties under this part, States shall not discriminate in form or in fact against vessels of any other State (art. 227). If the coastal State pursues a foreign ship, the measures taken by it shall be notified to the flag State (Article 221).

If the own flag State pursues a foreign ship as a result of the same offense, the persecution of the coastal State should be suspended, unless the offense has been committed in territorial waters of the latter or in the case of serious injury or, in short, that the flag State has repeatedly missed its obligation to ensure the effective application of the relevant rules (Article 228).

According to Fernandez (2004) should not only analyze the economic issue merely to corporate survival, we have to expose the personal scale, forms of risks to cover the technological risks of the companies (apud by CUNHA, 2004).

In regarding that Fernandez (2004) said in the EU a certain norm, very similar to the Brazil's polluter pay's principle, is applicable. For Colombo (2006) the "Polluter Pay's Principle has three primary functions: the prevention, repair and redistribution and internalization of environmental costs". This type of public policy involves the need to clarify the commitment of companies like the problem is addressed above all to make himself understood the process. Fernandez (2004) explained the idea when it has applied form is as follows: the first phase is mainly focused on check compliance with verification of compliance management.

The second phase relates to observe the development of improved identification system. And in the last phase, aims to promote leadership positions for sustaining and effectiveness of policies implemented during the process.

Therefore, it can be said that for the purpose of meeting new environmental standards for air emissions in maritime transport, public policies are important to prevent environmental
problems. That is, as there are some lenient laws on the development of fuel regulation methods. It can evaluate the systematic areas of emissions control.

This statement is due to the fact that some amateurs choose not to adopt any quality identification methodology in the supply of their vessels, i.e.: do not use fuel with low sulfur content, which proves the importance of observing this understanding, the fact that impunity exists independently of creating public policies even when is possible to generating negative sanctions for particular industry. With regard to analysis of control the type of vessel inherently to accessibility criteria prays for responsibility of management of the Maritime Authority.

For these reasons, we have noticed aspects of indirect responsibilities in legal terms, the eco-efficiency variable which correlates to any type of fuel, forms of consumption, which generate direct damage or environmental impact. Such a perception is needed by technology assessment capacity of the fuel type which presents in terms of quality differently by boat in purchasing management by shipowners or managers of the vessels.

CASE STUDY

The ECA’S procedures to control the quality of “BUNKER”

As stated by IHS Maritime (2014), based on the global financial crisis and rising oil prices, there were organizational changes to the maritime sector and Danish shipowners began to examine alternatives for new ways to reduce fuel consumption in their activities production of maritime services.

However the period of this position was too short as Maria Bruun Skipper (2014) senior adviser of the Association of Danish Shipowners, the measure of this most intense phenomenon occurred in the period between 2008-2013, when the Danish shipowners needed at any price cut CO2 emissions by almost fifty percent and it was necessary to incorporate a new fuel technology vessels.

Since then, the Danish shipowners are studying how to keep reducing the environmental impact and sustain an ecologically balanced environment by controlling emissions. Henceforth in these particular shipowners has shared their technological methods to control fuel consumption. This practice successfully enabled encouragement the shipping eco-efficiency in management systems that enable the best ways to control atmospheric emissions, mitigating technological measures on the high seas.

However, it is necessary ongoing investments in several laboratories to support the fuel quality analysis. It currently seeks to finance the purchase of technologically sustainable fuel, usually one that has low sulfur content.

For this purpose, some shipowners from January 1, 2015 began to charge its customers a surcharge to comply with an environmental standard of Low Sulphur Emission. This surcharge arose from an environmental standard, which was generated as a result of public measures to the maritime sector, allowing more satisfactory environmental change in terms of emissions.

Accordingly, there are geographical boundaries for the performance of activity on all cargo transported or to be transported from the port of shipment, even for transhipment and / or final destination operations, provided that these rules present is limited to the territorial sea, economic zone exclusive, inside the perimeter delimited Emission Control areas (ECA) in North America and other areas signatories of this legislation in other countries.
For better perception of geographic understanding of this normative It demeans controlling mitigation measures for economic action and financial sanctions shipowners to the user, as can be seen in Figure 1:

![Figure 1 - Map of emission control areas Area (ECA) in North America](image)

Source: Sealand (2015)-Adapted by authors

The Low Sulphur Emission rate links technology greatly to a top goal of controlling the environmental impact of this type of activity.

However, the lack of proportionality of skilled labor on the high seas, these investments still have vulnerable in terms of environmental enforcement and the results should be determined by public authorities, the management criteria in the supply procedure per sample every entry permit vessel in the territorial sea.

The maritime service user ecologically committed to minimizing human impacts more harmful to the planet. It can manifest itself by voluntary direct payment to the owner responsible for this kind of eco-sustainable funding.

At the beginning of the application of the surcharge to the market it was perceived that the rate was equally applied - regardless of the type of containers and shipping route. Currently, the practice of charging for shipowners, this rate varies per 40-foot containers and, or 20-foot containers, where for this last - the commercial practice of some shipowners require charging at least fifty percent of the 40-foot container rate. The fee was established to support the demand for quality fuel imposed in the ECA area, to provide technological way, investments in resources to prevent particulate pollutants reduction arising vessels that generate in their production processes, emissions greenhouse gases.

Nowadays, in order to a global governance model are growing demands for international conventions, mainly in response to maritime operations with greater environmental impact in production, which takes place every longitudinal distance from the port of the transport event source or in exploration maritime shipping in the various sea routes.

Based on Right of caution to the environmental damage in the activities of shipowners, demanded a new supply rule in maritime operations in support of seeking positive results for the environment.

Concomitantly, it is necessary to determine indices environmental performance in terms of air emissions by a variety of tactics in maritime activities, mainly to prevent tampering by the naval oil and bunker suppliers, greatly choice of supply where there is need for new technological review of fuel quality at sea.
Pragmatically, some shipowners providers receive some delivery notes for fuel without proper certification, this means that there is no descriptive content about the product. Typically, these documents are substantive evidence that there is some uncertainty in some marine buyers, on the credibility of the fuel oil with low sulfur content.

According to Chan (IHS) in 2014 via a report from the University of Cardiff, this practice has been observed by the maritime authorities, which gave even more reason to alert the environmental concerns of air emissions in the supply of these vessels is possible through quality fuel prove the environmental damage.

For example, owners describe have bought three thousand five hundred tons of heavy fuel oil Heavy Fuel Oil - HFO and over fifteen hundred tons of marine gas Maritime Gas Oil - MGO. However, in reality, the owners bought only two hundred tons of MGO-four thousand five hundred tons of HFO.

In this report there are samples of bunker delivery notes and deviations that are evidence of illicit fuel, which is made by means of false tank allocation in vessels. Note that the problem of the accuracy of the inspection is already knowledge of the European Commission, which states that only one in a thousand ships is inspected with regard to compliance with fuel quality control standards in EU ports.

According to an executive of a major maritime amateur, the procedural control of the quality of marine fuel requires greater oversight in EU ports. Thus, it is believed that can politically be even greater diplomatic resilience, which would justify the current lack of enforcement, because abusive practices by rounded vessels with flags of convenience.

The most effective way to prevent such practices harmful to the environment can be the replacement of funding constraints of commercial activity per projects compliance practices. In this regard, what some Danish banks are doing in terms of the environment is healthily in business political practices. For having adopted compliance clauses which will threaten cancel loans to errant shipowners, which prevent the encouragement of supply operations per illegal maritime practices.

JUSTIFICATION

Request of Eco- Efficiency and Environmental Global

Since 1990, the Kyoto Protocol under the UN Climate Convention, UNFCCC, has set CO2 reduction targets for a number of developed countries, but not for developing countries. The agreement expires in 2012, and the prospects of reaching a consensus on global climate regulations, which the US and the developing countries can also accept, are extremely small. However, a provision in the Kyoto Protocol acknowledges that a solution for the shipping industry should be found under the auspices of IMO (DSA, 2012).

Maritime companies in the port sector should develop environmental management concurrently the production of maritime service, from the analysis of fuel technology which should be measured by calculating the energy eco-efficiency.

The legal and institutional point of view of the port to supply procedure adopted by shipowners in foreign waters for example ECA can change the EPI - Environmental Performance Index, the supply operation in Brazil in terms of results and atmospheric emissions.

In these terms, it is only reasonable understanding that the shipping industry’s contribution should be based on the fact that its emissions represent 2.7 % of total anthropogenic emissions of
greenhouse gases, corresponding to 10% of emissions by the entire transport sector (DSA, 2012).

The legal interests might be threatened by the lack of supervision in practice of small fuel suppliers to small boats, which creates environmental violations to nature, which occur more regularly besides uncontrolled environmental impact, regardless of the land area by right from the sea.

In regarding the importance to management sustainable purchasing, the enforcing environmental laws is revised as central part of EPA's Strategic Plan to protect human health and the environment. EPA works to ensure compliance with environmental requirements. One of function which give to EPA legitimacy to lead in this issue, to happen it is possibility take civil or criminal enforcement action against violators of environmental laws. For instance in regrading of sustainable purchasing one of EPA's top priorities is to protect communities disproportionately affected by pollution through our environmental justice (EJ) work. EPA is integrating EJ into areas such as (EPA, 2015):

- enforcement and compliance program planning and implementation,
- identifying cases to pursue and
- developing solutions to benefit overburdened communities.

For this reason, we are believe that any kind of pollution which will happen on the sea in reason of the bad quality of the fuel maritime. It will be responsibility of shipowners. Considering that the function of purchasing is of the origin by action of shipowner’s purchaser, is it possible to prove by maritime law that the bad management the shipowner will be in charge for any deleterious effect which would go to cause damages to society global.

**CONSIDERATIONS**

The legal interests might be threatened by the lack of supervision in practice of small fuel suppliers to small boats, which leads environmental infractions, which occur more regularly, uncontrolled environmental impact, regardless of the land area or by right from the sea.

Initially it was investigated the basis of territorial delimitation of the Sea to establish the strict liability as to demonstrate the effectiveness of the International Environmental Law.

Whereas in the issue on monitoring the quality of maritime bunker be diffuse interest where it is expected a collaborative management of shipowners who need to reduce atmospheric emissions from ships.

It is possible adjust in the domestic sphere the essential standards mandatory way in Brazil, certificating when purchasing fuel, which will prevent the environmental damage caused by emissions of adulterated fuel.

However, under the UNCLOS, legally, we observe significant principles that support the discipline training for increase of new environmental standards for supervision of the process with regard to purchase of bunker to the lowest environmental impact and measures and sanctions to the owner that makes use of an illegal supply process.

Similarly, it appears that the positive sanctions on purchasing a suitable fuel to the type of vessel that may present in this instance, public policies in favor of maritime practice, by means of low-sulfur every particle emitted in the air, they are measures that should be adopted by other shipowners.

However, in order to mitigate emissions of other gases in the atmosphere, to combat greenhouse gases, cited in numerous scientific articles, as the main drivers of climate change on the planet.
The practice of the Danish shipowners, reveals the importance of environmental management in the supply operation of the vessels.
It is inferred, then, that social and environmental responsibility of sustainable management lies upon purchase and the selection of fuel made by the owner, whose economic decision may vary by type of bunker adopted in supply, and hence the pollution can be correlated the economic interests of the owner responsible for fuel shipping charges.

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