



The Recycling Safe and Environmentally Sound Ships

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ABSTRACT

Through the green marine concept, an environmental certification program is being expanded by adding a performance indicator for responsible ship recycling. The safe and environmentally sound recycling of ships have not yet been certified with sufficient validity for their entry into force, and the new indicator is the result of cooperation between industry, environmental organizations, the scientific community and government representatives. It is divided into two parts. The first set of standards invites ship owners participating in green marine by creating a stock of Hazardous Materials (IHM), while the second group applies to owners who already dismantle/recycle one or more ships in any given year.

As usual, the new level 1 standards require that existing regulations be monitored. While level 2 calls for the development of a policy governing ship recycling. Level 2 also requires delivery of all newly created ships using IHM so that when the ship is eventually dismantled, recyclers know exactly the types, quantity, and location of the hazardous material on board the ships. Given that many existing ships do not have an IHM, level 3 is built on a level 2 plan by requiring the ship-owner to create an IHM for at least one existing ship. While at level 4, IHM should be available for 50 percent of the fleet, while at level 5, all ships should have IHM stock. A new ship recycling performance indicator will be optional during the first year of evaluation, as is always the case when new indicators are added to the program. It will then be mandatory to obtain a green marine certification.

Keywords: Green marine; Hazardous materials; Ship recycling; Environmental factors

INTRODUCTION

Ship recycling remains one of the most dangerous industries and is increasingly recognized by national and international agencies as necessary for improvement. It is important to ensure that ship-owners approved by the green marine application voluntarily accept the criteria for ship recycling, as there are no regulations that compel them to do so. By developing a ship recycling index, green marine helps improve the practice and performance of the Transparency in Ship

Recycling (SRTI) initiative, a multi-stakeholder initiative that uses transparency to accelerate a voluntary, market-driven approach to responsible ship recycling and ultimately shipbuilding the key stakeholders In the industry and similar ideas from investors and lenders to insurance companies and shippers all play a role in accounting for ship owners. By calling for transparency, they help raise the level of responsible ship recycling [1].

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This proposal paper consists of two parts: The first part describes the purpose and approach taken in assessing the environmental conditions prevailing in and around the ship recycling area in general in order to provide a basic understanding of the environmental factors that affect this region. Part 2 describes in more detail the environmental impact of ship recycling in the form of an environmental impact analysis. This is not complete because this evaluation is not expected to constitute a full formal sea or environmental impact assessment, which requires a more detailed study. Some aspects are covered in greater depth in other elements of the proposed innovation. Information was obtained through a literature and investigation survey and fieldwork undertaken in relation to this report to identify the main features of the ecosystem under study.

Ship recycling is located within a complex area of coastal marine environments. In addition, study the effects of tides on the coast. Moreover, direct discharges of sewage from residential, commercial and industrial sources near the places of recycling. Moreover, how it influences the environment, ship recycling is not, therefore, an isolated activity. These other inputs will have their own impact on the local environment and should be distinguished from those for which ship recycling is likely responsible.

Aspects that require further detail on the environmental status of the ship recycling area: Geographical context, hydrography, sediments, impacts of marine environment pollution, designated environmental areas, and environmental monitoring.

Ship recycling yards are located near heavy industrial areas (such as cement, glass, steel, re-rolling, jute, textiles, pharmaceuticals, and automobiles, which usually generate heavy metals, oil, acids, alkalis, ammonia, dye agents, drug disposal chemicals, detergents, antibiotics, organic and inorganic waste , Etc.).

LITERATURE REVIEW

Ship recycling is a difficult process, due to the structural complexity of ships and the need to adhere to environmental, security and health issues. Steel recycling requires direct correlation with environmental pollution through. Ecosystems including beach, surface and underground waters, biodiversity and risk to air quality through this process. Ship recycling can now provide jobs for 22,000 to 50,000 people directly. The project of recycling of safe and environmentally sound ships. A proposed project to promote the development of a safe and environmentally sound ship. The main objective of the project is to make the sustainable ship recycling industry in the future by helping it to improve the professional and safety, health and environmental conditions of work as most ship recycling projects are located within a region. Complex of marine, coastal and urban lands [2].

Environments

This activity began in the 1960's. A large share of the global ship recycling market. During the 1980's, there were 30

companies involved in the ship recycling industry and the number have risen to more than 100 companies in recent years around the world. Ship recycling activities are popular after passing the recession in 2014, with a total of 22.76 million tons (GT) recycled worldwide.

Aim and Goals

The aim of this study is to prepare an environmental impact analysis with up-to-date environmental information for the ship recycling industry. The specific goals are:

- Review the available publications by taking into account the report of the associated scoping study to provide a fresh picture of the environmental impact of the ship recycling industry [3].
- Identify local environmental pressures from other sources as well as their environmental impact.
- Carry out fieldwork (collection and analysis of environmental samples) and consult with stakeholders to obtain additional data to fill identified information gaps.
- Preparing a comprehensive report to study the environmental impact of the ship recycling industry. In addition, the above environmental goals the current project aims to conduct a study of the various aspects that affect shipbreaking activity in developing countries. It aims to analyze the pivotal issues on how to improve the practice of shipbreaking nowadays in preparation for implementation in the developing countries.

These goals are:

- Assessment of the economic impact of shipbreaking activity.
- Find and link relevant regulations and recommendations for ship dismantling activity.
- Studying the possibilities of applying and practicing ship breaking activity in developing countries.

State Proposed Solution to the Problem

Study the economic and environmental impact of the shipbreaking industry in developing countries. The end of the useful life of ships is the beginning of many economic and environmental problems [4]. It requires appropriate treatment, whether from protecting individuals or the environment or maximizing economic benefit from the practice of ship breaking, and there is a clear need for environmental and industrial treatment and the commercial problem associated with ship breaking activity. Ships represent a significant value even after their economic life when the carrier is not economically capable of the ship owner. Aging ships, due for shutdown, provide important raw materials in the form of steel scrap for steel mills. The ship's steel structure is estimated to be about 90% of its weight. It is a great waste of resources if left to deteriorate and not recovered. The process of recovering steel, usable machines, tools, devices, and other disassembled parts increases and becomes more important than before, which is referred to today as ship recycling, due to the development and manufacture of countries from this region with an inevitable

commitment to environmental considerations, and ship recycling activity has shifted, especially for developing countries looking to achieve much-needed growth for their industrial sector [5].

Ship recycling is a labor-intensive industry and an important source of steel for construction at a moderate price; however, ship dismantling is known to be a dirty and environmentally dangerous activity. Today, most ship scrapping activities in the world are carried out in a manual, labor-intensive manner on the beaches with almost complete lack of facilities and where environmental concerns are often, and there is a need for increased attention on ship scrapping activity in developing countries and the consequences that this may impose on the environment and human health. The shipping industry faces a large number of ships approaching retirement age as a result of the construction boom during the early 1970's and the phenomenal technological development of the ship industry. And commitment to the International Safety Management code (ISM), shipbreaking activity has now become one of the main issues which we are trying through the current project to establish professional and international rules through which the maximum benefit from this industry and be able to be more environmentally friendly and its international and domestic requirements [6].

Motives of the Current Project

For the ship-owner, the most important concern for him is how to maximize profits, and careful study of the sale decision of the ship is often more difficult than the opportunity to purchase and creates a problem in the balance of supply and demand, taking into account that the ship is treated as a commodity and as long as the ship is in good condition to sail can maintaining the operational competitiveness of the vessel as long as it is operating continuously and earning sufficient profit to cover operating expenses. The need for the current project begins if the ship becomes out of service due to the end of its useful life or the inability to cover operating expenses or the increase in the supply side of the ships according to their types or in addition to the imperative of international decisions such as the application of ships with double-hull tankers and the exits of single-hulled vessels that Entered into force recently. Placing the ship for unlimited periods would result in the deterioration of the hull and machinery. The cost that the ship may incur during inactivity will be a significant burden on the ship-owner. So the ship will be offered for sale to break the ship, in the steel making industry, the demand for iron and steel scrap would, one way or another affect the price of a ship for scrapping.

The Current Stages of the Shipbreaking Industry

Ship dismantling is an economically underdeveloped business compared to shipbuilding. Most shipbreaking facilities in the world use the manual method to cut a ship on a suitable shore or through shipyards with limited mechanical equipment. Due to the range of activity, ships are cut and burned when workers cut the metal with manually operated

oxygen gas cutters. Although it is possible to increase productivity by using mechanical methods to dismantle ships, they require significant capital and require private investment, so the process of breaking non-motor ships is in three stages. In the preparatory stage, the ship owner removes all the equipment that was not included in the deal, in addition to the materials that can be explosive, especially if it is an oil tanker. Therefore, the ship-owner must be able to secure a gas-free certificate from a company recognized by the country in which it is located the ship is expected to be dismantled [7].

The second stage is when the ship is already delivered to the ship breaking site. Ships usually operate at full speed or are towed ashore during high tide to assist in the ship's propulsion and steer. Anchor chains are then attached to ensure the vessel is secured. Buyers then take care of all the unstable, or easily removable, items, then board the ship and start unloading the selected items. Once this process is completed in the last stage of the process, the ship breaking tool will determine, according to the ship's structural side, with steps of how to get the individual parts out of the ship. The vessel must be disassembled consistently and ensured that it does not disintegrate or fall. Before starting work on steel, holes approximately six meters in length are cut along the length of the structure but the bottom is left intact even when pressed from outside, to create a horizontal platform.

These openings are considered as a means of ventilation and escape. With torches cut, removable parts are dropped out and pulled to the ground with winches. Then the ship is gradually berthed to shore while the tide is rising while it is slowly crushing. The length of time for the ship to be dismantled depends largely on its size. Many parts of the ship are directly reused. Although ferrous and non-ferrous scrap available from the ship provide revenue for ship breakers, other equipment on board the ship also contributes to a certain percentage of cost recovery. By crushing ships, iron scrap is the main product. Steel parts that are cut from the ship are delivered to the steelmaking sector for reprocessing. Treatment is carried out depending on the type and quality of ferrous scrap; it is usually used in steel and iron production through melting and remodeling. Non-ferrous metals such as ship propellers, aluminum hulls, copper tubes and electrical wires are separated, insulated and locally marketed with care. The consumers who buy these materials are builders of local ships near shipyards. This includes ship engine, diesel engines, pumps, cranes, radar and other electronic equipment. Almost all of the materials on board are virtually reused. Furniture fixtures and tools are also marketed. With no waste recycling facilities in place, ship-owners must find the easiest way to dispose of non-marketable materials. Then the remaining materials that cannot be sold are burned and from here, environmental problems arise [8].

The Economic Dimension of Ship Breaking

How to sell ships for scrap. As in any other sector of the shipping industry. The shipbroker plays a vital role in the freight market. When there is a downward trend in the freight market, the decrease in the supply of freight comes soon after

in order to offset the demand generated by international seaborne trade. Ship-owners are under pressure to dismantle old or less productive vessels.

Ships may be required to abandon shipbreaking; however, the prices that can be offered will be subject to a number of common factors in the shipping industry. The expected final value of the vessel, the "residual value" that corresponds to the estimated investment when building the ship, whatever the current market price, can still be seen as a key factor in obtaining a healthy freight market. Regardless of the basic factors affecting the ship's life cycle for demolition, the ship's scrap price may be subject to sudden landing and landing. There is no real mechanism for regulating market price movements and selling ship scrap. There are several sources pollution during the demolition the VLCC:

- Cathodic protection
- Batteries
- Coatings and paints
- Fire-fighting
- Refrigerants
- Thermal insulation
- Steel structure
- Electrical insulation
- Oil residues
- Preparations prior to scrapping

DISCUSSION

Dimensions of the Current Proposed Paper

The traditional method of shipbreaking has witnessed many negative aspects, such as the depressing working conditions and the environmental situation in shipyards in developing countries, in addition to the multiplication of the absence of control measures. Moreover, whether the country that breaks ships has a national law to protect the environment and labor law, but the authorities either failed to fully implement it or the labor law is old and the country's economy cannot conform to international standards. The shipping industry is already aware of the environmental and social problems that the industry creates but the issues are beyond its capabilities. The International Maritime Organization (IMO) has adopted the topic of ship recycling into its work program and this has been supported by shipping organizations and environmental groups.

Actions and Proposals

The shipbreaking industry has long been described as "dirty", "dangerous" and "environmentally friendly". In addition to the lack of careful planning and implementation. The problem posed by the shipbreaking process threatens to get worse because a large proportion of the global cargo fleet is in the stage of reaching the stage of scrapping and then cracking and can be reinforced by rapidly changing technology and introducing stricter regulations. In order for the shipbreaking industry to increase and expand its operational base to other

continents, the specifications of the ship-breaking site must be specified in addition to the introduction of technology through the crushing equipment and the standards must be developed to serve as a basis for improvement. To eliminate the common rule in the current cracking countries, whether they are in India, Bangladesh, or Pakistan, namely: the absence of established procedures on how to deal with them and no scientific foundations are available to deal with dangerous materials; or commitment to the safety and security standards of the site and workers, which exposes them to great health risks of danger Unknown. In addition, the salaries and contracts of the workers do not meet the minimum requirements for a decent life [9]. Therefore, the current proposal includes due improvements to reduce the impact of the shipbreaking industry on the environment and reduce worker exposure to hazardous materials. In addition to reducing the number of accidents and the disposal of dangerous materials from ships during the ship breaking process:

- Development of international standards related to worker safety and environmental protection.
- Develop a clear methodology for ship building in the future.
- Establishing a national fund to support dealing with waste in all its forms.
- Update international restrictions on the ship's life cycle.
- Preparing a developer guide for ship owners on how to reduce operational waste on ships sold for scrapping.
- Development of a certification system for scrap yards.
- Establish requirements for stopping or scrapping documented ships.
- Transfer technology or funding to improve shipbreaking facilities and business practices.

Specify the Advantages

- Improve understanding of the environmental context of the ship recycling area in terms of the marine and coastal environment, to be able to fully estimate its potential impacts compared to other possible inputs from recycling, and distribution.
- An additional study on the scope and distribution of living organisms over time, especially to identify types of beneficial indicators and those of local and commercial importance, including fish, shrimp, crab, mollusks and coastal plants (mangroves).
- Improving understanding of the separate contribution to environmental pollution made by another industry, agriculture, or others, to be able to distinguish between this and ship recycling especially when the same materials are released (such as heavy metals, oils, greases, and paints).
- Further developing environmental pollution monitoring programs with time measures, which helps to clarify the causes and better assess mitigation efforts.
- The "shipyard area" defined in the coastal environment, which limits activities within a specific area to help

consider potential environmental impacts and the regulatory mechanism.

- Develop laboratory facilities for environmental monitoring to help achieve these goals.

CONCLUSION

- Opportunities for unskilled work force with the proposal will be weak.
- The difficulty of changing the culture of ship breakers who tend to withstand the negative impact of shipbreaking activity not only for humans but also for the marine environment.
- The enormous financial and investment requirements that are required to develop the shipbreaking industry with initiatives for a more in-depth approach to creating well-planned facilities dedicated to ship scrapping.
- Financial and investment requirements necessary to establish facilities for receiving and treating waste.
- Requirements to improve safety levels and working conditions in general.
- Training programs with international standards to rehabilitate unskilled labor to take over the operational operations of shipbreaking sites.
- The complex mechanism for cooperation by many bodies, such as environmental affairs, to issue an environmental standards manual for the shipbreaking industry.

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