

# Developments on Ship Recycling

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## Abstract

*This paper describes the development of a new IMO mandatory instrument for minimizing environmental and safety risks of ship recycling from 1998, when this problem was dealt with for the first time by the Marine Environment Protection Committee (MEPC), to July 2007 when the last MEPC meeting (MEPC 56) was held.*

*The structure of the draft Convention is explained together with its draft guidelines and a number of key issues currently under discussion: application of the Convention to “inland waterway vessels”, “domestic ships” and “government owned ships”, development of the inventory of hazardous materials, relations with recycling facilities of non party States, etc.*

*Finally, a timetable for the development of the Convention, as established by MEPC 56, is presented.*

## Keywords

Convention; ship recycling; hazardous materials; inventory; facilities; guidelines.

## 1. Introduction

Ships, at some stage, reach the end of their operating life. The life cycle for most ships, from “cradle to grave”, gives a life span of operation of 20-25 years, or more. The steady withdrawal of older ships and their replacement by new tonnage is a natural commercial process which provides the opportunity for the introduction of safer and more environmentally friendly designs, greater operating efficiency and a general reduction in marine risk.

In general, recycling is one of the basic principles of sustainable development. For the disposal of time expired ships there are few alternatives to recycling:

1. conversion of the ships for other uses (storage facilities, breakwaters or tourist attractions);
2. scuttling, controlled by the London Convention (no opportunity for the steel and other materials and equipment in a ship to be recycled).

So, recycling is, generally, the best option for all time-expired tonnage. Furthermore, demand for ship recycling is expected to rise in the near future as ships, par-

ticularly oil tankers, which do not conform to the new international requirements set by the MARPOL Convention, reach the end of their commercial lives. In this context, while the principle of ship recycling is sound, the working practices and environmental standards in the recycling facilities often leave much to be desired.

All these issues, together with the lack of specific prescriptive requirements in the existing regulatory instruments, led to the need to develop a new mandatory Convention, the “International Convention For the Safe and Environmentally Sound Recycling of Ships”.

The purpose of this paper is to give an overview of matters related to the development of the new IMO Convention on Ship Recycling. The paper starts with a description of the background which led to the development of the first draft. Then a brief description of the current draft Convention and its guidelines and a summary of the most crucial issues under discussion are given in sections 3 and 4. Section 5 contains the timetable approved by MEPC 56 which will culminate in the adoption of the “International Convention for the Safe and Environmentally Sound Recycling of Ships” by a Diplomatic Conference, expected to be held in April 2009.

## 2. Background to the development of the International Convention For the Safe and Environmentally Sound Recycling of Ships

### 2.1 From MEPC 42 to the 24<sup>th</sup> Assembly

The issue of ship recycling came to the attention of the IMO Marine Environment Protection Committee at its forty-second session (MEPC 42) in 1998. At MEPC 43 it was generally agreed that IMO had an important role to play in ship recycling. In particular a central role in developing new requirements for the preparation of a ship before recycling, and a co-ordinating role towards other International Bodies (ILO and Basel Convention) involved in recycling matters.

At MEPC 47 (March 2002), it was decided that IMO should develop a recommendatory instrument (guidelines) to be adopted by an Assembly resolution. The following documents were taken into account in the process of developing these guidelines:

1. Industry Code of Practice on Ship Recycling;
2. Guidelines of the Basel Convention for ship recycling facilities;
3. Guidelines of the International Labour Organization which address working conditions at recycling facilities.

The “IMO Guidelines on Ship Recycling” were finalized by MEPC 49 (July 2003) and adopted by the twenty-third session of the Assembly (December 2003) by resolution A.962(23). On 1 December 2005, at the twenty-fourth session of the Assembly, they were further modified by resolution A.980(24).

## **2.2 IMO Guidelines on Ship Recycling (A.962(23))**

### **2.2.1 Guidelines**

The “IMO Guidelines on Ship Recycling” are addressed to all stakeholders in the recycling process, including administrations of ship building and maritime equipment supplying countries, flag, port and recycling States, as well as intergovernmental organizations and commercial bodies such as shipowners, ship builders, repairers and recycling yards.

The guidelines note that, in the process of recycling ships, virtually nothing goes to waste. The materials and equipment are almost entirely reused:

1. steel is reprocessed to become, for instance, reinforcing rods for use in the construction industry or corner castings and hinges for containers;
2. ships' generators are reused ashore;
3. batteries find their way into the local economy;
4. hydrocarbons on board become reclaimed oil products to be used as fuel in rolling mills or brick kilns;
5. light fittings find further use on land.

Furthermore, new steel production from recycled steel requires only one third of the energy used for steel production from raw materials. Recycling thus makes a positive contribution to the global conservation of energy and resources.

However, the guidelines recognize that, although the principle of ship recycling may be sound, great attention must be paid to the working practices and environmental standards in the yards. While ultimate responsibility for conditions in the yards has to lie with the countries in which they are situated, other stakeholders must be encouraged to contribute towards minimising potential problems in the yards.

In short, these Guidelines seek to:

1. Encourage recycling as the best means to dispose of ships at the end of their operating lives;
2. Provide guidance in respect of the preparation of ships for recycling and minimising the use of potentially hazardous materials and waste generation during a ship's operating life;
3. Foster inter-agency co-operation; and
4. Encourage all stakeholders to address the issue of ship recycling.

The guidelines are recommendatory.

### **2.2.2 Green Passport**

The basic concept of these guidelines is to prepare the ship, so that the dismantling process can be carried out safely and the dangerous materials on board can be handled properly. For this purpose a document, the so-called “Green Passport”, should accompany the ship through its operating life. This document should contain:

1. ship's identification data;
2. list of potentially hazardous materials used for the construction (reporting location and approximate quantity/volume);
3. list of operationally generated wastes and stores, to be prepared prior to the final voyage to the recycling facility.

The Green Passport should be prepared by the shipyard for new ships and by the shipowner for existing ships, while the shipowner is responsible for the updating during the ship's life.

For the inventory of potentially hazardous materials and wastes, 3 appendixes are attached to the guidelines containing:

1. a list of hazardous wastes and substances;
2. a list of potentially hazardous materials which may be on board ship;
3. a model form of the inventory to be kept on board.

### **2.2.3 Other requirements of the Guidelines on Ship Recycling**

Shipbuilders are invited to limit hazardous materials in the construction of ships. Substances prohibited by international conventions such as:

1. the Stockholm Convention on Persistent Organic pollutants (POPs);
2. the Montreal Protocol on Substances that Deplete the Ozone Layer;
3. the International Convention on the Control of harmful Anti-fouling Systems;

should not be used in the construction, refitting and repair of ships.

The recycling facility should be selected according to its capability to recycle the ship in compliance with national legislation and with international Conventions. In particular the “Guidelines on Safety and Health in Ship-breaking” developed by ILO and the Basel Convention's “Technical Guidelines for the Environmentally Sound Management of the Full and Partial Dismantling of Ships” should be used as reference.

The dismantling of the ship should be carried out according to a Recycling Plan defined by the shipowner and by the recycling shipyard. The contract for dismantling should request the ship to be recycled according to the defined plan.

Finally, before the ship is delivered for dismantling, it should be made safe by ensuring that:

1. spaces are certified gas free as applicable;
2. oxygen deficient spaces are clearly marked;
3. areas with structural integrity problems are clearly identified;
4. wastes on board are minimized or eliminated, depending on the capacity of the recycling shipyard to handle properly such wastes.

“Guidelines for the development of the ship recycling plan” were issued by Circular MEPC/Circ.419 dated 12 November 2004. The guidelines give general advice on the methods and procedures that should be included in the plan and on the responsibilities for the development of such a plan. Moreover, they specify that the plan should comprise three main parts:

1. a worker safety and health plan (SRP);
2. an environmental compliance plan (ECP);
3. an operational plan (OP);

listing for each part the relevant aspects that should be included.

### 2.3 From MEPC 53 to MEPC 56

In July 2005, the Marine Environment Protection Committee (MEPC 53) agreed that the IMO should develop, as a high priority, a new instrument on recycling of ships with a view to providing legally binding and globally applicable ship recycling regulations for international shipping and for recycling facilities.

The IMO Assembly in November-December 2005 concurred with the decision of MEPC 53 and adopted resolution A.981(24) “*New legally-binding instrument on Ship Recycling*” requesting MEPC to develop a new instrument that would provide regulations for:

1. the design, construction, operation and preparation of ships so as to facilitate safe and environmentally sound recycling, without compromising the safety and operational efficiency of ships;
2. the operation of ship recycling facilities in a safe and environmentally sound manner; and
3. the establishment of an appropriate enforcement mechanism for ship recycling, incorporating certification and reporting requirements.

In March 2006, MEPC 54 made progress in developing the draft text of a mandatory instrument. A Working Group on Ship Recycling was established to work on a draft text proposed by Norway. The proposed instrument was made up by articles and an Annex with regulations for safe and environmentally-sound recycling of ships, covering requirements for ships, requirements for ship recycling facilities and reporting requirements.

A work plan for the further development of the Convention was agreed with a view to completing it in time for its consideration and adoption in the 2008-2009 biennium.

A correspondence group was established to carry out that task and to develop a provisional list of necessary guidelines with a view to reporting to MEPC 55 in October 2006.

With the assistance of the correspondence group, the development of the Convention and of its guidelines continued at MEPC 55, at an ad hoc Intersessional Working Group (May 2007) and at MEPC 56 (July 2007).

## 3. Structure of the draft Convention

### 3.1 Convention

Presently, the Convention is only a draft, nevertheless it's quite improbable that its structure will be changed in

a substantial way. The Convention's structure can be described as follows (Fig. 1):

The Convention's preamble is followed by articles which establish the main legal mechanisms. In particular:

1. Application (article 3): define the application field of the Convention:
  - applies to ships entitled to fly the flag of a Party
  - applies to ship recycling facilities operating under the jurisdiction of a Party
  - does not apply to warships
  - does not apply to ships below 500 GT. However, Parties shall adopt measures ensuring that ships below 500 GT act in a manner consistent with the Convention, as far as reasonable and practicable
  - no more favourable treatment of non-Party ships
2. Fundamental obligations of a Party (articles 5, 6):
  - Ensure compliance of its ships by survey and certification (article 5);
  - Ensure compliance of its ship recycling facilities by authorization (article 6).
3. Fundamental rights of a Party (articles 7, 8):
  - To inspect ships in its ports (PSC) (article 8);
  - To be informed on the basis for the authorization of facilities (by other parties) (article 7).
4. Comprehensive system for detection of violations and follow-up actions (articles 9,10):
  - Co-operation among Parties;
  - Investigation and gathering of evidence;
  - Initiate proceedings;
  - Information to Parties involved;
  - Establish sanctions which are adequate in severity to discourage violations of the Convention.

These articles are followed by the Annex to the Convention which contains regulations divided into four chapters:

1. Chapter 1: general provisions.
2. Chapter 2: requirements for ships. This chapter is further split into:
  - Part A on design, construction, operation and maintenance of ships;
  - Part B on preparation for ship recycling;
  - Part C on surveys and certification.
3. Chapter 3: requirements for recycling facilities;
4. Chapter 4: reporting requirements.

At the moment there are 6 appendices:

1. Appendix 1 - Control of hazardous materials: contains the list of hazardous materials which are controlled by the Convention;
2. Appendix 2 - Inventory of hazardous materials: minimum list of items for the inventory of hazardous materials;
3. Appendix 3 - Form of the International Certificate on Inventory of Hazardous materials;
4. Appendix 4 - Form of the International ready for recycling Certificate;
5. Appendix 5 - Form of the Authorization of Recycling Facilities;
6. Appendix 6 - Form of the Statement of Completion of Ship Recycling.

In addition to the articles, the Annex (containing the regulations) and the Appendices, the Convention makes

reference to a number of guidelines in order to grant uniformity in the application of the Convention's provisions and to provide a solution for the various technical matters that the application of the Convention may produce.

### **3.2 Guidelines**

Even though at the last MEPC session (MEPC 56, 9-13 July 2007) it was realized that the finalization of the guidelines could not take place until after the adoption of the Convention, a number of draft guidelines have already been developed and they can be considered a good starting point to make the Convention a complete and accurate instrument.

#### **3.2.1 Guidelines for the Inventory of Hazardous Materials**

These Guidelines provide recommendations for the development of the Inventory of Hazardous Materials in compliance with regulation 7 "Inventory of Hazardous Materials". The Guidelines have been developed to give essential requirements to all the players concerned with development of the Inventory (e.g. shipbuilders, equipment suppliers, repairers, owners of ships and ship management companies) for practical and reasonable development of the Inventory.

The Inventory aims at providing ship-specific information on the actual hazardous materials on board the ship in order to protect safety and health of workers and prevent environmental pollution at the ship recycling facilities.

#### **3.2.2 Guidelines for Survey and Certification**

article 5 of the Convention prescribes that each Party shall ensure that ships flying its flag or operating under its authority and subject to survey and certification are surveyed and certified in accordance with the regulations in the Annex of the Convention. The purpose of these Guidelines is to provide instructions for surveys and certification of ships under the Convention referred to in regulations 11 and 12 of the Annex of the Convention. These Guidelines assist Administrations and recognized organizations in the uniform application of the provisions of the Convention and shipowners, shipbuilders, suppliers, ship recycling facilities, as well as other interested parties to understand the process of surveys, issuance and endorsement of the certificates.

In short, the Guidelines provide the procedures for survey to ensure that a ship complies with the Convention, and those necessary for issuance and endorsement of an International Certificate on Inventory of Hazardous Materials and an International Ready for Recycling Certificate, both absolutely necessary for the dismantling of a ship in a recycling facility of a party State.

#### **3.2.3 Guidelines for Inspection of Ships**

IMO has established procedures for port State control through Resolution A.787(19) as amended by Resolution A.882(21). These procedures include all relevant IMO instruments. In addition each instrument has specific procedures required by the Instrument itself. The draft Guidelines for Inspection of Ships relevant to the

Convention on Ship Recycling include the provisions of the Convention which are subject to port State control, procedures for inspections of ships required to carry the International Certificate on Inventory of Hazardous Materials and procedures for inspections of ships of non-party States.

#### **3.2.4 Guidelines for the Authorization of Ship Recycling Facilities**

These Guidelines provide recommendations for a Party in establishing mechanisms for the Authorization of Ship Recycling Facilities. The Guidelines may also be useful for ship recycling facilities in establishing compliant capability and preparing for the authorization process. article 6 of the Convention and the provisions contained in regulation 17 of the Annex to the Convention form the basis for these guidelines.

#### **3.2.5 Guidelines for Safe and Environmentally Sound Ship Recycling**

These Guidelines are to be used in conjunction with the related regulations in Chapter 3 of the Annex to the Convention, so as to assist ship recycling facilities, specifically, to implement them in a proper way. The objective of the guidelines is to improve ship recycling facilities in order to reduce the risks to workers' safety and environment.

#### **3.2.6 Guidelines for the Development of the Ship Recycling Plan**

Regulation 9 of the Convention prescribes that a specific ship recycling plan must be developed by the recycling facilities in consultation with the shipowner prior to any recycling of the ship can take place.

The "Guidelines for the Development of the Ship Recycling Plan" provide guidance for the preparation of a suitable ship recycling plan (SRP), as required in regulation 9 of the Annex to the Convention. In particular these guidelines provide instruction for the development of the following plans constituting SRP:

1. Worker Safety and Health Plan

This plan provides a concise description of the Recycling Facility's plan and procedures for protecting worker health and safety. The SHP should demonstrate that the safety and health programme supports the level of effort, environmental compliance and recycling and disposal procedures required for the project;

2. Environmental Compliance Plan

The Environmental Compliance Plan (ECP) serves as the primary basis for evaluating the degree to which the ship recycling facility:

- understands the environmental risks associated with ship recycling and the environmental requirements imposed by national and international laws and regulations;
- can manage and dispose of all the materials used in the structure of the ship in an environmentally sound manner
- implements controls to protect the environment.

### 3. Operational Plan

The Operational Plan (OP) describes the technical approach to performing the work, showing the procedures to accomplish hazardous/regulated materials handling during the cutting process, the step-by-step method for recycling the vessel and the processes in place for assuring compliance with applicable worker safety and environmental laws.

## 4. Key issues currently under discussion

The draft Convention on Ship Recycling is now under development and a number of key issues of great weight for the future achievement of the Convention are the subject of extensive discussions. The most significant key issues are listed and briefly described in the following paragraphs.

### 4.1 Application (article 3) – “domestic ships”

During debates on the development of the draft Convention it was at first agreed that domestically trading ships should not be excluded from the application of the Convention, as this could create a loophole for some ships to avoid the requirements of the Convention. On the other hand it has been stressed that some countries have thousands of domestic and inland vessels which, if covered by the Convention, would impose a very heavy workload on the Administration.

Subsequently, the problem was split into two different ones:

1. Application of the Convention to inland waterway vessels;
2. Application of the Convention to domestically trading ships.

The first problem regards article 2 (definition of ship) and will be discussed in paragraph 4.2.

With regard to point 2, at the last Intersessional Working group on Ship Recycling and at MEPC 56 Working Group on Ship Recycling the majority of the Delegations agreed that the Convention should not apply to domestically trading ships. It was suggested inserting a relevant text in article 3.3 to exclude ships which exclusively operated within a single Country and which are recycled within the same State. This possibility was supported by the fact that, in a State Party, reception facilities have to comply with the severe requirements of the Convention and consequently the scrapping of “domestic ships”, although excluded from the Convention, would be carried out in a safe and environmentally sound way in any case. No decision was taken and the group agree to further discuss the matter at its next session.

### 4.2 Definitions (article 2) – “Ship”

As mentioned before, during debates on the development of the draft Convention, intensive discussions took place on the definition of “ship”. Initially article 2.10 defined a ship as a vessel operating in the aquatic or marine environment. Both words were written in square brackets thus including the possibility to bring inland waterway vessels under the application of the Convention. In fact, many of these vessels would not be ex-

empted from the application of the new Convention because of their size (more than 500 GT) or because of their trades, as such vessels often trade between more than one Country. It was argued that the safe and environmentally sound recycling of this type of ship is a matter to be taken care of by the States concerned as part of their safety and land environment protection policy and is therefore considered not to be an issue for the Convention. Furthermore, inland waterway ships cannot sail overseas to a different recycling yard and are, for that reason, not part of the objective of the Convention. These ships are normally recycled within the region that they operated in and are governed by the local rules for treatment of waste.

Furthermore, inland waterway ships differ substantially from marine ships not only concept wise but also in terms of their regulations, certification and survey, and tonnage measurement (they have never sailed and do not sail under IMO Conventions), which also means that the different proposed regulations and articles of the draft Convention cannot be applied to them.

Finally it was agreed to keep only the word marine in the definition and in this way to exclude inland waterway vessels from the application of the new Convention, although some would have preferred the same result to be achieved by amending article 3 (Application).

### 4.3 Implementation (article 13 bis)

An extensive discussion concerns the introduction of a mandatory audit scheme for the Parties of the Convention to ensure full implementation of the Convention itself.

IMO Legal Office identified the following potential problems in connection with article 13bis:

1. the lack of precision in making a mandatory application of “the general auditing scheme developed by the Organization”;
2. the problem of maintaining the level of confidentiality called for;
3. the creation of a mandatory enforcement mechanism over State-Parties with no clear consequence for failure to comply; and
4. the awkward relationship that might develop between the Organization and its members if it is empowered to compel Parties to undergo a periodic audit.

Moreover the audit scheme identified by article 13bis could interfere with the sovereign rights of the recycling State.

The discussion regarding article 13bis contains two separate issues, namely whether the Convention needs a mechanism for uniform implementation and secondly whether article 13bis is the right mechanism.

If the need for a mechanism of uniform implementation of the Convention was recognized, no alternatives to article 13bis were found.

### 4.4 General Requirements (regulation 8 of the Annex)

#### 4.4.1 Recycling facilities of non-Party States

The problem of recycling ships flying the flag of a Party State in recycling facilities of a State which is not Party

to the Convention (if it can demonstrate that it is capable of recycling ships in a safe and environmentally sound manner) was extensively discussed.

It was argued that the prohibition to recycle Party ships in non Party recycling facilities (ensuring their safe and environmentally sound recycling) would raise concerns about the availability of sufficient safe, environmentally sound recycling capacity, and thus could have the perverse effect of discouraging States with significant recycling needs from ratifying the Convention.

Furthermore allowing recycling of Party ships in safe and environmentally sound facilities of non-Party States would not be a disincentive for recycling countries to become Parties to the Convention. First, allowing recycling at such facilities may encourage rival recycling facilities to upgrade in order to be eligible for that business. Second, as individual facilities in a non-Party State qualify for the recycling of Party ships, that non-Party State may become more inclined to ratify the Convention.

Moreover some concerns were expressed about the possibility that such a prohibition might be inconsistent with international trade rules.

On the other hand, it was highlighted that the possible recycling of Party ships in non-Party reception facilities would lead to a fundamental change in the concept of the draft Convention and would affect a number of its articles and regulations.

It was stated by Norway and supported by other that, if a future decision is taken by the Organization to establish a solution within the Convention for non-Party facilities which can demonstrate a standard according to the Convention, it would be necessary to ensure the following:

1. specific conditions for the use of non-Party facilities;
2. a legally robust regime;
3. control mechanisms and transparency; and
4. it must not be more favourable to be non-Party to the Convention.

#### **4.4.2 Precleaning**

The issue of hazardous substances removal is a central problem in the development of the draft Convention.

During past discussions some stakeholders promoted the removal of hazardous substances in a developed Country prior to the arrival of the ship at the ship recycling facilities of a developing country. On the contrary, other stakeholders supported the removal of hazardous materials in the recycling facility where the dismantling of the ship will take place (removal of hazardous materials is only possible by the complete scrapping of the ship).

A compromise was reached by forcing prior removal only if the recycling facilities are not authorized to handle the hazardous materials identified in the inventory.

Subsequently, the possibility to recede from the obligation to remove hazardous materials was acknowledged for recycling facilities when preparing the ship recycling plan.

#### **4.5 Ready for Recycling (regulation 10 of the Annex)**

No draft text for regulation 10 “Ready for recycling” has yet been proposed. regulation 10 defines the ready

for recycling criteria to be fulfilled in order to obtain the ready for recycling certificate. The ready for recycling certificate has to be issued prior to any recycling activity taking place.

The issue of Ready for recycling was considered particularly important and any decision on this matter was postponed to the further development of Part C (Survey and Certification) of the Annex to the Convention.

The complexity of sale processes for end of life ships is well known. It is felt, in light of the draft Convention, that the ready for recycling criteria may significantly impact upon these processes and increase liabilities and risks for stakeholders if due consideration is not given to the commercial realities of ship recycling in their formulation.

For the Convention to be effective in the context of the global ship recycling market, any compliance mechanism to enforce the ready for recycling concept must be proportionate, balancing the obligations of Parties under its provisions realistically.

### **5. Timetable for the development of the Convention**

MEPC 56 (9-13 July 2007) received the report of the Intersessional Working Group (May 2007) and established, during its session, a Working Group to continue the development of the draft Convention and of the guidelines. MEPC 56 also decided to establish a further Intersessional Working Group which will be held in France (January 2008) to further develop the draft Convention in view of MEPC 57 (March – April 2008).

During MEPC 57, an article-by-article and regulation-by-regulation review of the draft Convention will take place. MEPC 57 also will recommend a date (probably April 2009) for holding a Diplomatic Conference for the adoption of the new Convention. This date will be endorsed by IMO Council in June 2008.

MEPC 58 (October 2008) will establish a Drafting Group for the finalization of the draft Convention and will circulate it for the Diplomatic Conference.

The Diplomatic Conference will adopt the International Convention for the Safe and Environmentally Sound Recycling of Ships probably in April 2009.

The above work plan can be summarized as follows:

**Table 1: Revised working plan**

ISWG	January 2008
MEPC 57 (WG)	April 2008
Council C100	June 2008
MEPC 58 (DG)	October 2008
Diplomatic Conference	April 2009

## 6. Figures

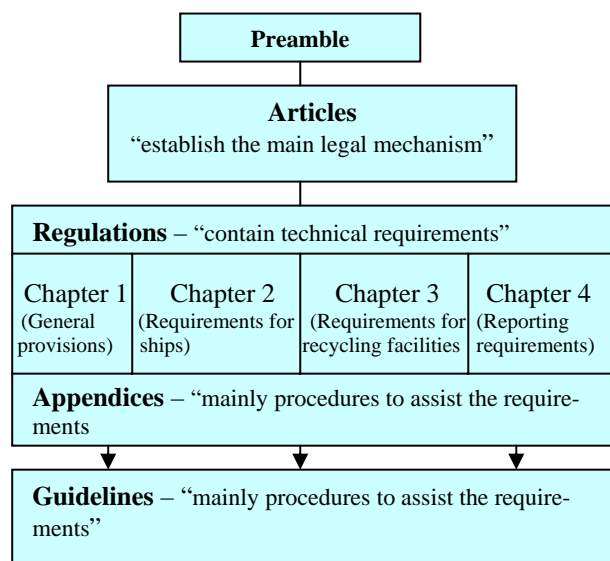


Fig. 1: Structure of the draft Convention

## 7. Conclusions

Although work is still in progress for the development of the Convention, a number of important key issues are currently under discussion.

As shown before, these issues regard different aspects of the draft Convention and their solution is strictly connected with the future success of this new Instrument.

The main problem is to define rules able to gain unanimous consensus in order to avoid some countries, worried about the possible consequences of excessively binding rules on their economy, rejecting the Convention.

The challenge is to avoid excessively binding standards

that cannot be applied worldwide, ensuring at the same time, a substantial improvement in current recycling practices in order to obtain the safe and environmentally sound recycling of ships.

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